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TRADE AND SERVICES

No. 1224

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INTERNATIONAL ECONOMIC RELATIONS

ECONOMIC RELATIONS WITH FOREIGN COUNTRIES

USSR-Bulgarian Cooperation

East Berlin AW--DDR AUSSENWIRTSCHAFT in German 7 Nov 79 p 1

[Text] The general agreement on specialization and cooperation in material production for the period to 1990 was signed by the deputy chairmen of the Council of Ministers and the chairmen of the State Planning Commission of the USSR and the People's Republic of Bulgaria, N. Baybakov and K. Sarev, on 15 September of this year in Sofia. It was the first long-term bilateral program of this kind to be concluded between the USSR and another CEMA member country. As is well known, the USSR, the People's Republic of Bulgaria, the Hungarian People's Republic, the GDR, the People's Republic of Poland, the Socialist Republic of Romania and the Czechoslovak Socialist Republic, during the already traditional meeting in the Crimea between General Secretary of the CPSU Central Committee L. I. Brezhnev and the highest representatives of the fraternal parties, had agreed to conclude long-term bilateral programs for specialization and cooperation in production for the period to 1990 between the USSR and the respective partner country. These programs embody the coordinated policy of the Marxist-Leninist parties to make the next decade a period of intensive cooperation in production as well as in science and technology. They create the preconditions for a qualitatively new phase of bilateral economic relations, for further comprehensive cooperation and rapprochement among the fraternal countries.

Expansion of Cooperation in Fuel, Raw Material and Energy Management

The main goals of the general agreement between the USSR and the People's Republic of Bulgaria are to make a maximum contribution to solution of the strategic tasks involved in building socialism and communism by intensifying cooperation by the national economies and deepening the mutually advantageous and rational division of labor, to strengthen the economic potential and to secure its dynamic and effective development. These are the goals stated by the Soviet economic journal EKONOMICHESKAYA GAZETA in a detailed report. The forced development of specialization and cooperation encompasses in principle almost all branches of social production of both countries. Thus, close cooperation is envisaged in energy management in order to make comprehensive and effective use of all available energy resources, and especially in order to develop nuclear energy.

Both countries have extensive experience in bilateral as well as in multilateral cooperation. In the 1976-1980 Five-Year Plan alone, such projects as the construction or expansion of the Kozloduy nuclear power plant and the Varna and Mariza East-III thermal power plants are being realized with the technical assistance of the USSR in the People's Republic of Bulgaria. About 80 percent of the electric power of Bulgaria is presently being produced by energy installations of Soviet manufacture. With the assistance of the USSR, various production projects of the Kremikovtsy Metallurgical Combine are being redesigned and modernized so that the production capacity for rolled stock in this combine will increase from 2.7 to 3 million tons. In other branches of industry, too, the two countries cooperate closely. The People's Republic of Bulgaria, on the other hand, participated or is participating in such projects of multilateral cooperation as the "Soyuz" natural gas pipeline, the Ust'-Ilimskiy Cellulose Combine, the Kiyembay Asbestos Mining and Refining Combine and the creation of production capacities for ferrous raw materials and ferro-alloys. The general agreement between the USSR and the People's Republic of Bulgaria provides for the further development of these forms and directions of cooperation. It expands the planning foundation for an effective solution to fuel/energy problems in the interest of both countries.

Comprehensive Cooperation in Machine Building

A special place is given to cooperation in machine building. At stake here is the comprehensive solution of problems of scientific-technical progress and an increase in the concentration and technical level of production. One of the main directions in the specialization of Bulgarian machine building at the present time is the production of cable-suspension and tracked electric hoists, forklifts and industrial trucks, as well as the means for electronic computer technology. As far as industrial trucks are concerned, also called electric trolleys or motor-driven carts, the People's Republic of Bulgaria is the biggest producer among the CEMA countries. Within the framework of close cooperative relations, Bulgaria supplies a broad selection of completion parts for WAZ motor vehicles to the USSR and receives such vehicles as a return consideration. Specialization in production between the two countries is also taking place in machine-tool building and tool making, in the production of construction and road-construction machines, in textile- and agricultural-machine building, in tractor construction and in the petroleum processing industry. In accordance with the general agreement, these directions of cooperation are being further developed, with the cooperation being essentially of a comprehensive nature. It encompasses scientific research, project-planning and design, the production of jointly developed new machines and equipment and the coordination of investments for the development of production capacities for the respective products.

Stronger Collaboration in the Area of Consumer Goods

Closer cooperation is being pursued in agriculture. The People's Republic of Bulgaria at the present time already has at its disposal a strong agricultural production potential. In 1978 alone, the country exported to the other CEMA countries 144,000 tons of fresh vegetables, more than 200,000 tons of canned vegetables, 119,000 tons of fresh fruit and more than 154,000 tons of canned fruit, as well as a substantial volume of dairy products, eggs and other products of agriculture and the food industry. Closer cooperation between the USSR and the People's Republic of Bulgaria during the next decade is oriented toward securing the further intensification of agricultural production through forced mechanization, chemicalization, land improvement and selection and toward perfecting the production structure in accordance with natural soil and climate conditions, in order to achieve a significant improvement in meeting the demand of both countries for foodstuffs and agricultural raw materials.

Both countries will also expand and perfect coordination in the production of consumer products in order to enlarge the production of consumer goods by expanding production specialization, to further increase their quality and to adapt their assortment still better to the growing needs of the consumers.

The further development of economic cooperation between the USSR and the People's Republic of Bulgaria and the closer interlacing of their national economies make it necessary to expand and perfect the material-technical base of the transportation and telecommunications system. In this regard, both countries attribute special significance to the further development of water transport.

In order to be able to do even greater justice to future demands with regard to production, both countries are setting themselves the goal of going farther in joining forces also in scientific research, planning and design.

USSR-France Trade

East Berlin AW--DDR AUSSENWIRTSCHAFT in German 7 Nov 79 p 2

[Text] The attempted goal of tripling the turnover of goods between the USSR and France during 1975-1979, by comparison with the past 5 years, will be reached. According to preliminary estimates, it will amount to approximately 9 billion rubles. This was confirmed at the 14th session of the Permanent Soviet-French Commission for Economic and Scientific-Technical Cooperation at the beginning of October in Moscow.

At the center of the commission meeting stood the realization of the arrangements and agreements reached during this year's summit meeting between L. I. Brezhnev and Giscard d'Estaing in Moscow, as well as the long-term program for expanding economic, industrial and technical cooperation for 1980.

Development of USSR Foreign Trade With France

	Turnover (in millions of rubles)	Export	Import
1970	412.8	126.0	286.8
1971	476.2	194.3	281.9
1972	544.3	194.0	350.3
1973	721.6	272.2	449.4
1974	941.0	397.9	543.3
1970/74	3,095.9	1,184.4	1,911.5
1975	1,296.5	495.7	800.8
1976	1,697.0	773.3	923.2
1977	1,723.9	819.9	904.0
1978	1,813.7	839.5	974.2
1979 (first 6 months)	1,169.5	484.9	684.6
1975/79 (first 6 months)	7,700.6	3,413.8	4,286.8

USSR/Economic Union Joint Commission

East Berlin AW--AUSSENWIRTSCHAFT in German 7 Nov 79 p 3

[Text] During the seventh session of the Joint Commission for Economic and Scientific-Technical Cooperation between the USSR and the Belgian-Luxembourg Economic Union (UEBL), the status and prospects of cooperation were discussed and its development during the past years was given a positive assessment. In his welcoming address at the meeting, USSR Council of Ministers Chairman A. N. Kosygin emphasized that the 1971 agreement on trade, which stipulates the general principles of trade relations between the USSR and the UEBL, the 1969 and 1974 agreements on economic, industrial and scientific-technical cooperation, as well as the 1977 long-term program for development of cooperation in economic affairs, industry, science and technology are good foundations for the expansion and deepening of cooperation. A valuable contribution in this regard is made by the joint commission, which this year will have been in existence for 10 years.

Cooperation between the USSR and the UEBL is developing rapidly and is encompassing ever new areas. During the last 10 years the turnover of goods has increased by a factor of 5 (in round figures); during the past year, it reached almost 700 million rubles.

Scientific-technical cooperation, too, is developing successfully, with its main areas, especially in cooperation with Belgium, being the chemical industry, machine building and the mechanization of production processes in ferrous metallurgy as well as nonferrous metallurgy.

At the seventh session of the commission the two sides expressed their willingness to expand their relations. In this context, discussions were held on new ways of developing cooperation.

Development of the Foreign Trade Between the USSR and the UEBL

	Turnover (in millions of rubles)	Export	Import
1970	149.3	74.0	75.3
1971	169.4	98.4	71.0
1972	189.4	109.3	81.1
1973	371.3	198.2	173.1
1974	626.0	305.2	320.8
1975	551.6	249.6	302.0
1976	570.5	328.8	241.7
1977	592.3	358.7	233.6
1978	691.4	413.9	277.5
1978 (first 6 months)	358.1	219.7	138.4
1979 (first 6 months)	342.9	183.8	159.1

Other Trade Agreements

East Berlin AW--AUSSENWIRTSCHAFT in German 7 Nov 79 p 4

[Text] Socialist Ethiopia

On the occasion of a week-long visit of USSR Council of Ministers Chairman A. Kosygin in Addis Ababa, the representatives of the two countries signed a protocol to the Soviet-Ethiopian agreement on economic and technical cooperation, dated 19 October 1978. In it they agreed to expand economic cooperation particularly in the sectors of agricultural machine building, petroleum processing, building materials production and the development of oil and natural gas deposits.

Envisaged, among other things, are projects for oil and natural gas exploration and their exploitation, as well as expansion of the oil refinery in Assab. After expansion, the oil refinery is to reach a yearly capacity of 1 million tons. Beyond this, the USSR declared itself willing to support Ethiopia with the erection of a factory for the assembly and later construction of tractors, harvesting machines and repair parts, as well as other agricultural implements.

Democratic and Popular Republic of Algeria

An agreement on support for the Democratic and Popular Republic of Algeria in developing the production of mechanical and electrical equipment was concluded in Algiers between the Democratic and Popular Republic of Algeria and the USSR. In connection with this, the USSR is granting a credit in the amount of 22.4 million Algerian dinars.

Brazil

At the beginning of October the sixth session of the USSR-Brazil Joint Trade and Economic Commission took place. As a result of the meeting, a supplementary agreement was signed extending the agreement on supplying Soviet machines and equipment to Brazil and on the purchase of Brazilian goods until 1982.

India

The first meeting of the Soviet-Indian Subcommission for Scientific-Technical Cooperation took place between 9 and 12 October in Moscow. There the partners clarified the realization to date of the program of cooperation in applied science and technology between the USSR and India for the years 1975-1980, including scientific exchange and cooperation between the USSR Academy of Sciences and the Indian Academy of Sciences. They set forth measures for realization of the section dealing with science and technology of the Soviet-Indian long-term program on economic, commercial and scientific-technical cooperation.

Nepal

The USSR will put up a factory in Nepal for the production of colophony and turpentine. The relevant agreement was recently signed in Katmandu. The enterprise is to produce 3,000 tons of colophony and 740 tons of turpentine annually.

Syrian Arab Republic

The fourth meeting of the USSR-Syrian Arab Republic Permanent Commission for Economic and Scientific Cooperation also took place in October, with both sides stipulating measures for the further development of mutually advantageous economic cooperation.

During the official state visit of Syrian President Assad in Moscow, which took place from 15 to 18 October, both partner countries expressed their satisfaction with the results of the fourth session. It was emphasized that special significance is being accorded cooperation in the key sectors of the economy of Syria, such as electric energy production and electrification, the petroleum industry, transportation, irrigation and other sectors of the national economy of the Syrian Arab Republic.

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KHAR'KOVSKAYA OBLAST ROUNDTABLE DISCUSSION SPONSORED BY 'DEN'GI I KREDIT'

Moscow DEN'GI I KREDIT in Russian No 10, Oct 79 pp 37-48

[Roundtable meeting in the public editorial office of the DEN'GI I KREDIT correspondents center at the Khar'kovskaya Oblast Gosbank Office: "Using Reserves for Increasing Consumer Goods Production More Effectively"]

[Text] Jointly with the public editorial office of its correspondents' center at the Khar'kovskaya Oblast Gosbank Office, the DEN'GI I KREDIT editorial staff organized and held a roundtable meeting in Khar'kov on 24 April of this year to discuss problems of economic incentives and influencing the increased production, expanded assortment and improved quality of consumer goods. Meeting materials are being published here in a condensed form.

At the request of the editors and the correspondents' center, the meeting was opened by P. F. Sidorov, manager of the Khar'kovskaya Oblast Gosbank Office.

V. A. Voskresenskiy, responsible secretary of the DEN'GI I KREDIT editorial staff, gave opening remarks and noted the importance of the questions up for discussion in light of the tasks put forward by the 25th Party Congress and subsequent CPSU Central Committee plenums.

N. A. Pernach, deputy chairman of the Khar'kovskaya Oblast Soviet of People's Deputies ispolkom, stressed that oblast party, soviet and economic organs are paying a great deal of attention to the production of consumer goods, to expanding the assortment and improving their quality.

Over the past 10-12 years, she said, we have dealt actively with questions of coordinating the work of enterprises regardless of their departmental subordination. This has required that local Soviets engage more substantively in developing the material and technical base, that they know in detail what items are being produced at each enterprise and influence more persistently the up-dating and expansion of the assortment of goods.

First of all, we posed the task of having all enterprises produce consumer goods. Our laborious daily work in this direction yielded results. We now have practically no enterprises in the oblast which can, based on their production opportunities, produce consumer goods and are not doing so. In 1978, 2.369 billion rubles worth of Group "B" industrial output was produced, a 3.4 percent growth over 1977, and cultural, personal and household items accounted for 19.7 percent of the total amount of consumer goods produced.

In solving this task, we have achieved a situation in which specialized shops or sectors to produce cultural, personal and household items have been created at enterprises of heavy branches of industry. Today, we can say that these tasks have practically been resolved. In recent years alone, enterprises of these branches have organized more than 25 specialized shops and sectors.

Much attention is being paid to problems of seeking out reserves for above-plan production of consumer goods. By a resolution of the obkom bureau and the oblast Soviet of People's Deputies ispolkom, industrial enterprises and organizations producing Group "B" output, regardless of departmental subordination, have additional assignments approved for them each year for consumer goods production, and first of all for goods the demand for which is not being fully met.

Whereas during the Ninth Five-Year Plan the average annual above-plan output of consumer goods (in retail prices) was 39.4 million rubles in the oblast, it had reached 43.9 million rubles during the first three years of the 10th Five-Year Plan.

As enterprise internal reserves are revealed, the ispolkoms of the oblast, city and rayon Soviets of People's Deputies are adopting resolutions on the above-plan release of consumer goods. Much work is being done along these lines by the oblast banking and financial organs, which are assisted by both the local Soviets and the enterprise leaders in checks and analyses to resolve these tasks.

Purposeful work is being done in the oblast to expand and up-date the assortment of consumer goods. Each year, new items are selected for mastering and release the following year at the USSR Ministry of Trade's Khar'kov branch of the Pavilion of Best Models of Consumer Goods. This is preceded by a great deal of preparatory work on the part of wholesale trade bases. Depending on the nature of the production, trade organizations recommend items to enterprises for mastering. What does this system yield? First of all, enterprises have an opportunity, when defending their orders for equipment and raw and other materials for the year being planned, to take the demand for new types of items into consideration as well. Conditions are created for better preparing production for the release of new goods. Trade organizations have an opportunity, in accordance with agreements, to count on new goods which will arrive at the trade network.

Year after year, the number of new types of items being mastered increases. During the Ninth Five-Year Plan, the average annual number of new items mastered was 282, and in the current five-year plan it has increased to 439 types. Over the past two years alone, new items worth in excess of 125 million rubles (in retail prices) have been produced.

The party obkom and oblispolkom hold expanded meetings each year with the participation of city and rayon party committee secretaries, city and rayon Soviet of People's Deputies ispolkom chairmen, leaders of production associations and enterprises, and party committee secretaries; at these meetings, questions connected with developing production and mastering new consumer goods are discussed. The meeting is preceded by a survey of articles already mastered whose production should be increased and of consumer goods recommended for mastering.

Much attention is paid in the oblast to problems of producing Group "B" items in the highest quality category. The proportion of output with the state Badge of Quality was 15.2 percent of all consumer goods produced in 1978 and 36.7 percent of all cultural, personal and household items. As compared with 1975, the amount of such items had increased 3.6-fold. We carefully analyze the state of affairs and constantly monitor the fulfillment of state and counter plans and socialist obligations to produce such goods.

In view of the fact that about 300 associations and enterprises in the oblast are producing Group "B" output, we are constantly seeking forms of influence and supervision which will facilitate the maximum use of opportunities available for meeting more fully the demand for various goods. Beginning in 1970, a statistical bulletin has been released each month on consumer goods; it reflects plan fulfillment indicators for production of Group "B" output (including cultural, personal and household items) not only in terms of total amount of goods produced, but also for 80-90 items in physical terms, by oblast city and rayon, and it gives a list of enterprises not meeting assignments as a whole and for the most important items.

Early in the Ninth Five-Year Plan, we began introducing forms of monitoring the work of enterprises producing consumer goods which combined state and public supervision. Initially, these were ispolkom technical councils, which were subsequently converted into ispolkom commissions to monitor the production and delivery to the market of consumer goods. Such commissions now operate in the oblast, city and rayon Soviets of People's Deputies.

We periodically discuss progress in carrying out the state plan and additional assignments on producing consumer goods and mastering new types of articles. Following schedules approved by the commission, branch surveys of consumer goods produced in the oblast are made at least twice a year. They include business-like discussions between industry and trade workers on improving the items being produced, on quantitative and qualitative aspects of the goods being offered. This is essentially the stage preceding the wholesale trade fairs to sell output for the following year.

In the course of the year, various aspects of the work of Group "B" enterprises are examined on a broad range of questions at meetings of the oblast Soviets of People's Deputies executive committees, which provides an opportunity to influence those leaders who are not yet filled with a sense of the proper responsibility for producing high-quality consumer goods.

The activeness of this work was particularly increased after adoption of the new USSR Constitution, which states that the local Soviets coordinate and supervise the activity of enterprises producing consumer goods within their territories.

In evaluating critically what has been done, we also see the shortcomings in our work. We still have not achieved a situation in which all enterprises are meeting plans and assignments in terms of volume, assortment and delivery schedules. Production and delivery evenness continue to be bottlenecks in the work of a number of enterprises of light industry, and it is important that intrasystem ties concerning deliveries of raw and other materials be strengthened. This would facilitate the more efficient use of production capacities.

The responsibility of material-technical supply organs for carrying out raw and other material delivery plans for consumer goods production should be increased. Unfortunately, cases of incomplete provision of the plan for producing cultural, personal and household goods with the basic types of raw and other materials and assembly components, especially for items in a complex technical assortment, are still not rarities.

Organization of interrepublic exchange of goods requires continued improvement. Khar'kovskaya Oblast, with its developed industry, could offer outerwear, for example, in exchange for footwear, knitwear and other goods. As we see, it is also necessary now for trade to change over to such organizational forms of management as all-union associations.

We should also like to have rail transport workers, in reference to consumer goods, re-examine their own "flow and counter-flow" positions, since that often delays commercial activity and the exchange of goods among oblasts.

We need to better coordinate the efforts of planning, financial and banking organs with other organizations: the Gosstandart administration, goods and trade quality inspectorates, and people's control committees. Thus far, they have often acted on their own, and we should prefer that they send the oblast Soviet of People's Deputies ispolkom joint suggestions on large-scale questions and problems which should be solved with a view towards meeting more fully the ever-growing consumer demand for durables and everyday goods. These organs, each from its own positions, should strengthen their influence on industry and trade.

The mechanism of economic incentives for expanding the production of goods for sale to the population also requires further improvement. Existing privileges in the use of profit obtained from sales of consumer goods made from production waste do not always stimulate the fuller use of these types of raw material in place of full-value raw materials. Economic levers for influencing enterprises supplying consumer goods not conforming to All-Union State Standards and specifications should also be used more actively.

The credit mechanism should also operate more actively. Many enterprises of our oblast could be using loans for fixed assets more extensively and developing the material and technical base for producing consumer goods more rapidly.

In conclusion, permit me to express my satisfaction with the roundtable meeting organized by the correspondents' center and editorial staff of DEN'GI I KREDIT, for providing an opportunity to exchange opinions, share experience and express our suggestions on the important problem of using existing opportunities, incentives and other economic measures of influence on increasing the production, expanding the assortment and improving the quality of consumer goods.

P. F. Sidorov (manager of the Khar'kovskaya Oblast Gosbank Office). It was stressed at the November (1978) CPSU Central Committee Plenum with new force that increasing the production, expanding the assortment and improving the quality of consumer goods is one of the pivotal national economic tasks.

A continued strengthening of monetary circulation and stability of the Soviet ruble have been ensured in our country on the basis of planned development of the national economy, growth in trade turnover, and the stability of retail prices for consumer goods. This depends first of all on the conformity of available market commodity stocks to the effective demand of the population. We therefore think that orienting the State Bank system towards searching out reserves for growth in the production and marketing of consumer goods is a task objectively determined by the very place and role of the State Bank in the socialist economic system and that it requires improving the efficiency of the Gosbank apparatus in this direction.

However, in our view, the organizational forms of this work have not yet been fully developed; in particular, we should like to have available to us a more or less systematized normative document on this particular question. We certainly do not think all the actions of Gosbank institutions need to be regulated locally in terms of organizing this work. The reference is only to basic directions and methods. It seems to us that it should be more precisely determined what exactly needs to be done in the crediting, financing, calculating, development and execution of cash plans to seek out opportunities for increasing cash resources by expanding the production of consumer goods. Some think the bank must perform purely monitoring functions in this area -- tracking the fulfillment of established plans and additional assignments on production and deliveries of market goods, ensuring that the production and delivery of poor-quality goods is not permitted, and, when necessary, taking appropriate measures of credit influence.

However, there is also a broader interpretation of the bank's participation in seeking out opportunities for increasing consumer goods production. It includes, along with the exercise of monitoring functions, the necessity of bank institutions' making economically substantiated proposals on organizing the production of new goods, expanding the production of goods by mobilizing intraeconomic resources. We consider this to be the more correct position. The USSR Gosbank, with its own institutions in each administrative region of the country which are thoroughly informed about the economy of each enterprise, cannot assume a passive stance on questions connected with increasing its own cash resources through the additional production of consumer goods.

Of course, we are experiencing certain difficulties in organizing this work (inadequate engineering training and competence of bank specialists in the area of production technology, a lack of adequately complete information at bank institutions on market conditions, on the consumer demand for particular goods, and so on). Nonetheless, our basic efforts need to be directed along just such lines.

Oblast Gosbank institutions and the oblast Gosbank Office systematically analyze the state of affairs of consumer goods production, make certain demands of enterprise and ministry leaders, regularly inform oblast and rayon party and soviet organs about shortcomings in this matter, participate in the work of various commissions, and periodically make suggestions on opportunities for expanding consumer goods production. But even that is not enough, in our opinion.

As has correctly been noted already, the weak aspects of this work include insufficiently close contacts between the bank and other monitoring organs. We are seeking ways of interacting with the state goods and trade quality inspectorate, the oblast planning commission, financial and credit organs, and are prepared to arm ourselves with experience in such coordination from other oblasts and republics. DEN'GI I KREDIT can play a large role in this.

Given all the importance and effectiveness of the organizational forms of Gosbank work associated with expanding the production and improving the quality of consumer goods, the main thing here remains, in our view, measures of economic influence which correspond to modern principles of economic management. In this regard, it is necessary to continue perfecting the banking mechanism. In connection with this, the question arises of whether we should seek some sort of new and specific methods of influencing the economy with a view towards increasing the production and delivery of consumer goods, or should we limit ourselves to existing methods which currently regulate bank interrelationships with the economy as a whole.

In our view, this is not an easy question, and a differentiated approach to different enterprises is required here. For example, one approach is required for enterprises of light and food industry which produce only consumer goods and at which the process of producing and marketing these goods is mediated entirely by bank credit, and another approach is required for enterprises of other branches of industry which produce consumer goods along with basic output. It was stressed at the November (1978) CPSU Central Committee Plenum that opportunities for increasing consumer goods production at enterprises of heavy industry are not being fully used. At our Khar'kov enterprises, by no means all leaders have yet overcome the attitude that consumer goods production is some sort of secondary matter. A number of enterprises having the necessary material base and technical potential available to them to develop the production of the more complex cultural, personal and household items have limited themselves to producing the same items, relatively simple in design and technology.

At more than 50 oblast enterprises consumer goods production is unprofitable due to the fact that there is little batch production and for other reasons.

There are enterprises which are not coping with the established plans and additional assignments for production of these goods, which are failing to carry out agreements concluded with trade organizations in terms of amounts and delivery schedules for individual items. Warehouses and shelves of the retail trade network are sometimes crammed with poor-quality goods and obsolete styles, fashions and designs not in demand.

Under these conditions, it seems appropriate to us that bank institutions take into account, along with existing indicators, the production of consumer goods when dividing enterprises up into those operating well and those operating poorly. In our view, privileges should not be granted when giving loans to enterprises which do not ensure fulfillment of plans for producing these goods or which supply trade with poor-quality items not in demand.

Gosbank institutions often handle cases in which enterprises redistribute manpower to basic production shops, to the detriment of work in shops and sectors producing consumer goods, and thus disrupt plans for producing consumer goods. These actions can also be cut short through the mechanism of monitoring the expenditure of wage funds: when the plan for producing consumer goods is not carried out, it would be appropriate to reduce the wage sum due by that portion of the planned fund which relates to the consumer goods not produced, that is, to count the added wage in that portion of the overexpenditure subject to being covered under established procedures.

We need to seek out reserves for increasing the effectiveness of crediting in the circulating capital of enterprises producing consumer goods. One such reserve is expansion of credit for measures associated with mastering the release of new types of items. In our oblast, industrial enterprises generally have access to such credit to master the release of new types of production-technical output, but credit is rarely solicited for measures associated with producing new types of consumer goods.

The system of crediting consumer goods in the circulation sphere, that is, in trade, also requires improvement. We are still not exerting sufficient influence through credit on trade organizations which accumulate above-plan, unsaleable inventories. Charging higher interest rates for credit for such goods often touches the material interests of trading organizations, and especially wholesale ones, very little if at all. But trade organizations, and wholesale bases first of all, must bear the responsibility when goods of poor quality or obsolete fashion, which the customer does not want to buy, reach store shelves from industry.

In our oblast, an experiment is being conducted in crediting industrial enterprises with consideration of product quality. Analysis of the results of this work shows that the steps taken by the bank have, in a number of instances, aroused enterprises to produce higher-quality output and to certify items promptly. This applies basically to enterprises of light and food industry and, in considerable measure, to enterprises of branches of heavy industry in which the proportion of consumer goods is not high and bank credit restrictions associated with the quality of these goods have little impact. We need to work more intensively to find ways of increasing the effectiveness of controlling output quality by the ruble.

It should be said that DEN'GI I KREDIT has begun paying more attention to questions of strengthening the influence of the monetary-credit mechanism on improving output quality. Articles on these questions by G. K. Kurilovskiy, city administration chief for the Chernovitskaya Oblast Gosbank Office, N. M. Panina, deputy chief of the economic planning administration of the Belorussian Republic Gosbank Office, L. M. Rykova, senior economist at that office, and others, have been especially useful.

G. P. Cherkashina (director of the Garment Factory imeni Tinyakov). As the well-being of the Soviet people improves, there are ever more insistent demands that our industry produce not only more goods for the people, but goods of high quality which will fully satisfy the growing needs of the consumer. The administration, party organization and entire collective of the enterprise are working persistently to resolve this task.

The factory has introduced a comprehensive quality control system, and the percentage of products up-dated each year is increasing. Production of output with the Badge of Quality, of better quality and assortment, and with an "N" index is constantly growing. Thus, whereas in 1976 some 15.1 percent of the articles produced bore the honored pentangle, in 1979 that figure had reached 23 percent.

The provision of shops with modern, highly-productive equipment is of top-priority importance in increasing production and in improving product appearance and quality. In 1978, the factory introduced and replaced 69 different pieces of technological equipment and upwards of 100 small-scale mechanization attachments.

The Gosbank has been of considerable assistance to the factory in retooling its production. By taking out a five-year loan, we were able to acquire and install a line for wet-heat processing of women's light overcoats, and the shop's output increased by 4.8 percent. At the same time, we have not yet achieved a situation in which each style produced is in demand among consumers. In 1978, the factory received 79 claims against product quality, totalling 28,300 rubles. Our collective was seriously criticized by trade organizations for the uneven release and delivery of output, for permitting deviations in meeting contract obligations regarding assortment.

We are often let down by our suppliers. In 1978, a number of textile enterprises supplying us failed to meet contract obligations. Unfortunately, trade organization orders are still imperfect and consumer demand is not always determined correctly, resulting in shortages of some goods and surpluses of others. But during the course of the year, when plans have already been assigned, raw material purchased and production readied, it is difficult to change the products list and meet the demands of trade organizations.

N. T. Svinarchuk (deputy chief of the economic planning administration of the Ukrainian Republic Gosbank Office). You noted that the enterprise has suffered because suppliers have failed to deliver output. What steps are you taking to influence them, and to what extent have they been effective?

G. P. Cherkashina. First, we explain to them that the enterprise is standing idle and not meeting the state plan. Then we begin levying fines. We have a profit of 450,000 rubles from this. However, the equipment stands idle due to a lack of raw material, and trade does not receive the goods it needs. The existing system of fines is not effective enough and, in our view, requires further improvement.

P. I. Verba (Corresponding Member of the Ukrainian SSR Academy of Sciences and head of the "Credit and Finance" department at Khar'kov State University). In discussing an important question like increasing consumer goods production, we must look at what opportunities Gosbank institutions have to assist in solving this problem successfully.

When examining the question of available reserves for increasing consumer goods production, we should note the unsatisfactory use of waste in industry. Any Group "A" enterprise has scrap which could be used to produce consumer goods. However, much scrap is presently being discarded and not used in the national economy.

It seems to me, therefore, that we must somehow generalize the experience of a number of enterprises and show that there are raw-material opportunities in heavy industry for increasing consumer goods production, and first of all for developing branches of local industry which are inadequately supplied with such raw material under the centralized system. DEN'GI I KREDIT can play a definite role in this by illuminating these problems more extensively and pointedly.

We obviously also need to seek out ways of improving credit relations with enterprises producing consumer goods. Previously, Gosbank institutions actively facilitated increasing the amount of consumer goods by granting credit to those projects providing such output. In 1970, 15.5 million rubles worth of credit was given in Khar'kov and the oblast, and consumer goods worth an additional 35 million rubles were produced. But last year, only 3.5 million rubles of credit was given.

In our view, it is appropriate to concern ourselves with again making credit an elastic, flexible source of financing expenditures on expanding consumer goods production. Plants will then be interested in obtaining the profit from additional consumer goods production.

We consider it necessary to anticipate broader economic steps to assist enterprises in producing consumer goods with the Badge of Quality. Loans must be allocated to expand production of consumer goods with the Badge of Quality without limit.

All this, it seems to us, would facilitate Gosbank institutions assisting the national economy more actively in increasing consumer goods production. Of course, we favor both monitoring enterprises and influencing them during the course of that assistance. But priority should be given to seeking out forms and methods of effectively assisting industry.

V. F. Verkhovskiy (oblast planning commission deputy chairman). Year after year, questions of developing the production, expanding the assortment and improving the quality of consumer goods occupy a larger and larger place in the work of the oblast planning commission. The experience accumulated in this matter convinces us that it is necessary to improve the methods of planning and monitoring consumer goods production.

As is known, the USSR Gosplan does not send the republics annual and five-year plans for consumer goods (Group "B") production in terms of volume indicators, limiting itself to determining the growth rates by ministry. At the start of the current five-year plan, we set ourselves the task of drawing up a five-year plan for consumer goods production for the oblast, distributing the amounts by year. In order to carry out this task, the oblast planning commission worked out the indicators on whose basis enterprises were to have submitted such plans to us. Whereas for enterprises producing cultural, personal and household items this problem was solved relatively easily, since we had five-year plans approved by superior organs, for other enterprises (which account for upwards of 75 percent of the consumer goods production here), the development of such plans was made more difficult by the lack of experience in this matter.

Using refined Group "B" indicators in percentages of the value of all output produced in 1976-1980, enterprises (associations) were able to work out and submit to the oblast planning commissions five-year plan calculations. These plans reflected the following indicators: volume of consumer goods (Group "B") production in wholesale and retail prices, including cultural, personal and household items; the availability of specialized shops and sectors to produce consumer goods, their capacity and production space, the proposed volume of construction of such shops, the quantity and volume of items being produced, the quantity and volume of obsolete items to be withdrawn from production and of new items to be mastered; the quantity of items to be produced in the highest quality category and being prepared to receive the state Badge of Quality; the provision of shops and sectors with equipment, number of workers employed in consumer goods production, and others.

Results of an analysis of the compilation and fulfillment of the five-year plan for producing Group "B" output testify to the effectiveness of this practice.

Purposeful work is being done in the oblast to increase the production of output in the highest quality category. The amount of Group "B" items with the state Badge of Quality is constantly growing, and was 731 items as of 1 April 1979.

As is known, statistical organs publish statistical bulletins on the technical level and quality of products twice a year, for amount of production as a whole, without subdividing output into groups "A" and "B."

Since questions of producing Group "B" output in the highest quality category are taking on increasingly important significance, the oblast planning commission has taken on the mission of recording production of these items. We introduced the indicator of "consumer goods" into the basic indicators of industrial enterprise development which are submitted to the oblast planning commission at the draft and approved plan levels. This provided us with an opportunity to compare volumes with five-year plan indicators and to analyze the reasons for any deviations which might be revealed.

Planning organs have been working for many years now to plan the development of consumer goods production, and much experience has been accumulated. However, oblast planning organs do not have available to them any information whatsoever which would enable them to "arm" themselves, as the saying goes, with the experience of other krays, oblasts and republics, to use the best that others have and determine their own place in solving the important task of increasing the release of goods for sale to the population. It would be appropriate for the USSR Central Statistical Administration or the USSR Gosplan to periodically publish statistical bulletins or informational letters on these questions. This would be of great assistance to us.

V. A. Voskresenskiy. How do you evaluate the existing mechanism for stimulating the additional production of consumer goods from production scrap?

V. F. Verkhovskiy. The instruction in effect on this particular question states that items made from scrap must have not more than 25 percent additional raw material. But if 30 percent full-value raw material is required, no economic privileges whatsoever are outlined. We think this instruction should be made more elastic. Industrial enterprises of our oblast could provide more output from scrap from the production of cutting tools, bristles and other items, but they do not have the material incentives to do so now, although we have sufficient industrial scrap. This instruction should be brought into line with the interests of production.

P. F. Sidorov. More consideration should probably be given here to other factors as well, and in particular to the fact that initial expenditures on mastering the production of output using scrap are higher than for basic specialized output, and in a number of instances the profit is considerably less, although the economic impact is on the whole obvious.

V. F. Verkhovskiy. This would seem to be a correct solution to the problem: at those enterprises producing consumer goods using scrap, a lower output must be planned, since somewhat higher expenditures will be required. Our local industry is now producing six percent of its output from production scrap, but that amount could be tripled if an appropriate economic foundation were created.

L. P. Stasevskiy (chief of the oblast trade administration). Work to improve the organization of calculations occupies an important place in the multifaceted activity of the economy and the Gosbank. Planned payments and calculations using drafts are being further developed as the forms which best facilitate drawing the instant values are received closer to the time the payments are made. However, there are still quite a few unsolved problems in organizing these calculations.

The deductions for packaging return which are used by certain Gosbank departments do not yield positive results in a number of instances, since plants make the deductions irregularly, creating indebtedness among trade organizations. It is necessary to seek further ways of improving calculations for the return of packaging in order that trade organizations will not experience financial difficulties for reasons not dependent on them.

It is appropriate to increase the role and importance of the effective economic lever of interest on credit. And the proposal that interest on credit be paid not through profit, but through material incentives funds, merits attention, in our view, as it would unquestionably be much more effective.

Calculations with customers for goods sold on credit also require continued improvement. The calculations now being used are extremely cumbersome and require large expenditures of labor by trade workers and Gosbank workers, since the payments are generally insignificant in amount, but are a high proportion in terms of number, which unquestionably influences increasing the flow of calculation documents passing through the State Bank.

L. K. Bakumenko (chief economist at the Khar'kov Bicycle Plant imeni G. I. Petrovskiy). Consumer goods comprise 80.2 percent of the total amount of output produced by our plant. In a year, the plant produced 845,000 bicycles. Over the past three years, the plant has mastered five models of bicycles and children's scooters which have been certified for the state Badge of Quality.

A number of problems must be solved in order for the enterprise to be more interested in improving the quality and assortment of consumer goods, in producing output with the Badge of Quality. At our plant, the wholesale price of a sport bicycle averages 1.7-fold more and the labor-intensiveness is three-fold higher than for a street bicycle. Given the existing practice of planning and evaluating production volume and labor productivity, which are calculated in wholesale prices, the situation described above forces the plant (with consideration of the number of workers established by the plan) to produce the less labor-intensive street bicycles instead of sport bicycles. It seems to us that transferring the plant to planning and evaluating its activity on the basis of net output as the normative indicator would essentially remove this contradiction.

The existing mechanism for stimulating the production of output with the Badge of Quality does not, in our opinion, fully interest enterprises in increasing the production of such output. The proportion of output with the Badge of Quality is 68.6 percent of out total volume. At the same time, conditions for stimulating that production at our plant are the same as at another enterprise where the production of such output is, let's say, only five percent. We think this indicator must be taken more fully into account when adding to economic incentives funds.

I should also like to touch on the question of the inadequacy of financial sources for covering additional expenditures which arise in connection with the mastering of new types of output. At present, these expenditures are applied to the prime cost of the items being produced. The issuance of loans for start-up and adjustment work is outlined, but the process of drawing up such loans is very laborious and long. There are no unified instructions on drawing up estimates for start-up and adjustment work.

M. Ya. Korobov (chief of the industry credit department of the oblast Gosbank office and responsible representative of the editorial staff). The development of Soviet credit indisputably testifies to the fact that the effectivess of operation of the credit-calculation mechanism depends directly on its orientation towards solving the pressing problems of state economic policy. As concerns the area of consumer goods production, just like the sphere of bringing such goods to the customer, it is our view that the credit-calculation mechanism still has significant unused reserves for increasing the effectiveness of its influence on these processes.

Speaking of these reserves, I should first of all like to support the opinion expressed here that we should deepen our differentiated approach when granting credit to enterprises and associations as a function of their work indicators on producing high-quality consumer goods. This stems directly from the fact that in our country, the Gosbank is invested with the task of planning and regulating money circulation and maintaining the stability of the Soviet ruble. To be specific, it has become necessary, in our view, to use as one of the criteria for including economic organs among those working well or poorly their fulfillment of plans for the delivery of consumer goods in accordance with contracts and job authorizations. This measure would facilitate strengthening the influence of credit and increasing the responsibility of association and enterprise leaders for promptly releasing market allocations, for their assortment and quality.

N. T. Svinarchuk. This suggestion is appropriate for industrial enterprises, but in solving the questions we are examining much also depends on another party, trade.

M. Ya. Korobov. The basic reserve for increasing the effectiveness of the credit mechanism in trade is the more systematic actualization of the most important principle of crediting, that of promptness, as well as a more active interest policy by the bank. Goods not in demand are often given credit for more than a year, and in crediting these goods at a percentage rate three points higher we do not always know the prospects for marketing them. The issuance of loans for unmarketable and slow-moving goods must obviously be a consequence of the development of concrete measures to discount them and market them within a certain period, based on type of crediting of above-plan reserves of commodity-material values in industry. By establishing a higher interest rate for overdue loans, we would stimulate the interest of trade organizations in marketing unpopular and slow-moving goods in the shortest possible period (currently, the interest rate for using fixed-date credit for unpopular and slow-moving goods for trade organizations equals the percentage rate for an overdue loan, that is, it does not matter to trade organizations whether they pay off that loan on time or not).

Not long ago, PRAVDA carried an article by Professor Ya. Orlov[1] in which he called for a mechanism which would force trade to work more effectively along the lines of forestalling the penetration to store shelves of goods not in demand among the population. The proper posing of this question, we think, is to ask if there is not a more flexible instrument for this than credit and interest rates. Here, the USSR Ministry of Trade should at the same time be concerned about the feasibility of the outlays plan so that interest rates are planned based on the volume of commodity circulation, the turnover of goods, and the proportionate participation of bank credit, rather than "by base," as is often the case.

In conclusion, I should like to state one other problem which could, in our view, be solved with the assistance of the credit mechanism. The reference is to the evenness of deliveries of raw and other materials for industry and of goods for trade. Much has been said about the harm caused by uneven deliveries. Let us assume that in combatting it, bank credit could be used more successfully for calculation documents en route. The fact is that the current procedure for granting such loans does not, in our view, create adequate conditions for monitoring the smoothness of the processes of producing, shipping and marketing output or the effectiveness with which circulating capital invested in shipped goods is being used. These circumstances testify to the necessity of planning investments of circulating capital into shipped goods.

V. A. Voskresenskiy. Reducing the amount of credit for calculation documents en route would hardly be economically justified in such cases.

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[1] See: PRAVDA, 12 April 1979.

M. Ya. Korobov. We consider it appropriate to continue covering fully the value of residual shipped goods through bank loans for calculating documents en route, but on the condition that their planned and above-plan portions are strictly delineated and with the appropriate use of credit restrictions, interest rate differentiation, and so on.

K. Z. Krulikovskaya (chief marketing expert of the oblast wholesale-retail office of "Odezhda" Company). Our company's collective is constantly improving its contacts with industry. One important factor in strengthening business contacts with industry is cooperative agreements concluded on the basis of principles of socialist competition between collectives of production enterprises and trade. Whereas economic agreements influence suppliers basically materially, cooperative agreements influence them morally: their implementation is based on the conscious and conscientious meeting of obligations assumed. All this yields positive results. At the same time, in our view, work with industry could be more effective, given the positive solution of a number of problems, and in particular, that of ensuring evenness of deliveries of goods in terms of 10-day periods each month to the oblast trade network.

At present, the bulk (up to 70 percent) of the goods arrive from industrial enterprises in the third 10-day period or the last five-day period, which seriously overloads trade workers, delays the movement of goods due to high volumes where goods are received and distributed in the stores, and in the end, has a negative effect on the quality of service to customers.

In our view, concluding agreements for the delivery of goods by 10-day period, with the fixing of definite economic responsibility on the part of industry for failing to meet these schedules, would facilitate solving this problem better.

The existing procedure for monitoring the quality of goods shipped to the trade network by industry requires improvement. It seems to us that it would be appropriate to introduce department-wide quality control at all industrial enterprises and that substandard goods arriving at the trade network should be discounted on the spot, in the presence of representatives of the corresponding organizations, which would provide a large national economic impact.

Introduction of the procedure of settling accounts for output only after goods are received would, in our view, facilitate improving the state of affairs in this area, for then unordered goods would not penetrate the trade network, there would be no spurts and blossomings, and there would be fewer refusals to settle accounts.

L. P. Malyuga (economic planning department chief in the oblast Gosbank office). This question really deserves attention, but adopting such a proposal could lead to delay in completing calculations. And how is trade using the rights it already has to influence industrial enterprises in order to obtain goods in the necessary assortment and of high quality?

K. Z. Krulikovskaya. Trade does have quite a few rights of economic influence on industry, but their concrete impact is not always effective. For example, trade purchases goods from industry at wholesale-industrial trade fairs with consideration of the production programs approved by main administrations, in which the products list being offered has already been basically set with consideration of existing opportunities. Thus, in practice, it often happens that it is not trade that dictates to industry the assortment of goods, with consideration of consumer demand, but industry which dictates to trade, according to the raw material, equipment and other items allocated to it.

In our view, the role and rights of trade organizations should be increased at the stage at which the assortment of items is agreed upon by industrial enterprises, and fuller consideration should be given to trade orders when planning consumer goods production.

A. A. Litvin (chief of the oblast financial department). I should like to deal with individual questions concerning the problem under examination. First, about the organization and production of consumer goods on the basis of additional assignments communicated to industrial associations and enterprises by both central and local organs. Implementing these assignments not only enables us to better cover the retail commodity circulation plan and further strengthen monetary circulation, but it is also an important reserve for increasing budget resources. However, the reserves for producing additional consumer goods are by no means exhausted. There are objective reasons associated, in particular, with material-technical and other factors, but there are also causes which are organizational in nature. It seems to us that one is the inadequate economic stimulation of rayon and city Soviet of People's Deputies ispolkoms to organize the production of additional consumer goods at rayon enterprises.

The fact is that the existing system of budget control does not take the specifics of this work into account. Under the conditions in our oblast, consumer goods production, both under the basic plan and in the form of additional assignments, is primarily concentrated in the intracity rayons of Khar'kov which have their own revenue base. In this connection, deductions to local budgets from incoming turnover taxes are a small proportion. For example, the Chervonozavodskiy Rayon budget deducts only 0.3 percent from the total turnover tax, and with the 1979 assignment communicated to enterprises to produce consumer goods worth an additional 3,202,000 rubles, only 5,000 rubles was deducted directly to the rayon budget.

Something of the sort also occurs with payments from profit. Without dealing with the question of profit and payments from it on the basis of net surpluses (since we are concerned here with the rights of ministries and departments as they concern redistributing planned and above-plan profit), we would consider it appropriate to leave at the disposal of the local Soviets the entire amount of turnover tax incoming from consumer goods production on the basis of additional assignments worked out and approved by them.

Introduction of this proposal would increase the material interest of the ispolkoms of the rayon, city and oblast Soviets of People's Deputies and would enable them to work more actively on questions of increasing the production of goods needed by the population.

N. A. Pernach. I think our rayispolkoms will work to expand the production of consumer goods even without an increase in receipts of funds to local budgets.

A. A. Litvin. Doubtless so. Under present conditions, the role of turnover tax as an incentive is increasing and it can help ensure a normal level of profitability on items. Oblast financial organs are doing quite a bit of work in this direction.

During the course of this work, one collides with price-formation problems, and we must not fail to focus attention here on the fact that consumer goods production, especially at enterprises of union, union-republic and republic subordination, is sometimes held up due to an absence of approved price lists. A great deal of time is spent on approving them in the union and republic price-formation organs, since the number of steps through which the calculation materials pass and are checked is large. It seems to us appropriate to broaden the products list of consumer goods and services for which prices and rates are approved by the oblast ispolkoms.

P. I. Bezruk (assistant manager of the Kominternovskiy Gosbank Department in Khar'kov). The Kominternovskiy Gosbank Department is constantly concerned with questions of stimulating the expansion of consumer goods production by monetary-credit and other economic and organizational methods. Our department's work in this area does not reduce to simple ruble control over consumer goods production. Economists of the Gosbank department join with enterprises in studying the possibilities for producing additional consumer goods through the fuller utilization of production capacities and the economical use of labor and material resources, and they make suggestions on up-dating assortments.

However, we are experiencing difficulties in this work since, in order to suggest something to an enterprise concerning the release of a new product, we need to know the market demand for the item and the opportunities the enterprise has. The Gosbank department does not have available to it the necessary statistical reporting from enterprises on the production and delivery of consumer goods. Obtaining such data from enterprises takes a great deal of our economists' time and makes organizing work on seeking out reserves for producing additional consumer goods considerably more difficult.

The Gosbank department is constantly attentive to the problem of the quality of output produced by industrial enterprises. On the basis of analysis of reporting on output quality, refusals to accept products because substandard output was delivered, data on losses due to defects, and quality reports from state inspectorate organs, the Gosbank department develops economic measures of influencing enterprises producing substandard output. We think credit and economic sanctions against such enterprises should be expanded; in particular, the entire wage calculated for the release of defective output should be paid with the permission of ministries and departments. This would increase the responsibility of industry for producing output of the necessary quality.

At the same time, one problem meriting attention is that, although measures of credit influence on industry producing substandard output exist, there are as yet few measures of encouragement, in our instructional materials, for enterprises producing consumer goods of high quality.

We propose that certain privileges be introduced for such industry, and in particular, the issuance of loans for up to 90 days to meet temporary needs, 60-day loans on wages, the issuance of credits for above-volume capital investments in amounts required to expand consumer goods production, and so on.

More extensive use should be made of credit for wages to master the production of new items. These credits are not being actively developed now, in particular because, in our view, drawing them up is complex and associated with checking technical documentation, and the department does not have at its disposal engineers who could check it on the spot. All this leads to delay in drawing up credit.

We also share P. F. Sidorov's opinion as to the usefulness of expanding DEN'GI I KREDIT articles on the problems being discussed here. We read with interest in our department, for example, about experience in strengthening bank influence on product quality which was shared by T. V. Kravtsov, manager of the Oktyabr'skiy Gosbank Department in Kishinev, V. S. Kapshevich, manager of the Yeyskiy Gosbank Department in Krasnodarskiy Kray, and others.

Ye. S. Belinskiy (assistant general director of the pipe-building planning department of the imeni S. M. Kirov "Khar'kov Turbine Plant"). At our plant, much attention is paid to the problem of increasing consumer goods production. Thanks to the activeness of the party committee, the administration, and the entire collective, the plant has had no gaps in meeting assignments for the production of consumer goods. Growth in production volume has reached 15 percent, and about 25 percent of the items produced bear the Badge of Quality.

However, there are still unused reserves in this great cause. The problem has not been fully solved as concerns providing plants producing consumer goods with materials and assembly components in the needed volumes and of the necessary quality. We think the suggestion that job authorizations indicate that these materials are to be used to manufacture consumer goods merits attention. We should also raise the rate of fines for failing to meet delivery schedules for materials to produce consumer goods.

The problem as it concerns sources of financing expenditures to develop sectors or shops involved in manufacturing consumer goods is insufficiently developed, in our view. Where goods are manufactured from production scrap, there is a consumer goods fund, although only a small one; in this connection, the percentage of deductions to consumer goods funds for the indicated purposes should be raised. Moreover, we think it appropriate to anticipate the creation of a separate material incentives fund to award bonuses to workers in shops and departments involved in producing consumer goods at enterprises where consumer goods are not the main specialized output.

V. Ye. Gorshenin (chief of the Khar'kovskaya Oblast administration of the State Inspectorate for Goods Quality and Trade). State inspectorate administration checks have revealed cases of the release by individual industrial enterprises of output which does not meet standards requirements. In order to prevent the delivery of substandard items to trade, the state inspectorate administration has stopped accepting them from industrial enterprises and, in individual cases, has instituted a special acceptance procedure. This is a strong, extreme measure for influencing industry.

We think that for enterprises permitting the systematic release of substandard output, the sales plan should count only that output accepted by the customer in terms of both quantity and quality. In this connection, business contacts between Gosbank institutions and state inspectorate organs should be strengthened with a view towards strengthening influence on enterprises producing output of inappropriate quality.

We encounter a few cases in which enterprises ship out substandard output in violation of our orders prohibiting delivery, and Gosbank departments do the calculations for them. Thus, in the six months an order was in effect prohibiting shipment of output by the Novovodolazhskiy Rayon Personal Items Combine, the Novovodolazhskiy Gosbank Department continued to pay the combine's account for substandard garments and knitwear shipped out.

In our daily work, we also encounter situations in which a number of trade organizations and wholesale links do not set up the proper barrier to defective items. As our checks have shown, after the marketing apparatus has accepted output a significant number of substandard goods are revealed. The insignificant amount of output being checked also testifies to unsatisfactory quality control of incoming goods. Thus, the "Ukroptgalantereya" wholesale base checks only 3.5 to six percent of the incoming output, although the republic "Ukroptgalantereya" office has set the amount to be checked at 12.5 percent at the minimum.

All this testifies to the fact that it is necessary to continue improving the organization of monitoring at both industrial and trade organizations, to perfect the system of state supervision. We support the proposal repeatedly offered in the press that all organizations monitoring output quality should be unified into a single nondepartmental organ.

Also participating in the discussion were V. G. Raduto, director of the Khar'kov Branch of the All-Union Pavilion of Best Consumer Goods Models;

N. I. Nazarov, manager of the Khar'kovskaya Oblast Stroybank Office; I. G. Lomanov, manager of the Krasnozavodsk Gosbank Department; M. N. Khisteva, deputy director of the institute of metrology, and a number of comrades transmitted their ideas in the form of letters.

Participating in the roundtable encounter were L. M. Boyko, obkom instructor for the Communist Party of the Ukraine; M. Ya. Savvo, chairman of the obkom of the trade union of workers at state institutions; workers from the Gosbank and State Labor Savings Bank administration, the oblast finance department, Stroybank, and scientific, industrial and trade enterprises and organizations in Khar'kovskaya Oblast.

In conclusion, V. A. Voskresenskiy, responsible secretary for the editorial staff, summed up the meeting briefly.

Problems of increasing consumer goods production, improving their quality and expanding their assortment, as was noted at the November (1978) Party Plenum, continue to be one of the key national economic tasks and one in whose resolution a definite role belongs to the economic mechanism, to monetary-credit levers.

The speeches by many conference participants spoke of the great amount of work which has been and is being done by party, soviet and economic organs of the oblast to expand the production of consumer goods and improve their quality; data and figures on that growth were presented and spoke eloquently about the fruitfulness of this work. Quite a bit has been done, but, as was generally noted, even more remains to be done by both industry and all the departments concerned, including by collectives of Gosbank institutions in Khar'kov and the oblast.

Particular stress should be placed on the growing necessity of closer and more effective coordination of the activity of planning, bank and finance organs, the State Committee for Standards, State Trade Inspectorate and other organizations on these problems. This will permit a more thorough and comprehensive analysis of the activity of industrial enterprises and trade organizations, revealing more fully reserves available in the economy for further improving the provision of consumer goods to the population, and the introduction of needed proposals by local party, soviet and economic organs.

A number of speeches noted that not all industrial enterprises of the oblast are maintaining the planned rates of growth in consumer goods production yet, that at a number of enterprises little work is being done to update assortments and improve the quality of these goods, that goods are not always delivered to trade in the assigned products lists. This requires that economic influence and monitoring of the activity of enterprises permitting disruptions of plans for producing and delivering consumer goods and not taking the steps necessary to seek out and actualize available internal reserves for improving the quality and up-dating the assortment of goods being produced be strengthened. In this connection, it is correct to emphasize the necessity of further perfecting the organization of credit relations with industry and trade, intensifying the differentiated approach and, in the course of crediting and calculating, strengthening economic influence on both industrial enterprises producing substandard output and on trade organizations permitting the acceptance and accumulation of unmarketable goods. At the same time, we must strengthen our stimulation, through credit and calculations, of an increase in the release and up-dating of high-quality output.

The speeches by conference participants also touched on a number of other questions associated with more fully meeting the growing demands of the population for goods and services. In our opinion, publication of the materials from this encounter will be useful to bank and industry workers in other oblasts and will enable them to reveal unsolved problems and develop additional suggestions aimed at successfully carrying out the tasks set by the 25th Party Congress.

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INCENTIVES FOR HIGH QUALITY PRODUCT

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 9, 1979 pp 60-66

[Article by Zh. Ibragimov, candidate of economic sciences]

[Text] The Report Address of the CPSU Central Committee to the 25th party congress pointed out that "an effective system of material and moral incentives combined with strict and unavoidable penalties for violation of planning and contract discipline is needed" to accomplish a further rise in the efficiency of social production. This also applies fully to incentives to raise product quality.

A great deal has been done in this direction in recent years. A set of measures to strengthen cost-accounting incentives has been carried out as the set of instruments governing economic activity was improved. For instance, the material incentive fund was formed; it links closely together the indicators, bonus size and sources of the bonus pertaining to high product quality.

The introduction of sales as an indicator has also helped to raise product quality, since manufacturing products of good quality guarantees steady sales and the enterprise's normal financial condition.

Moreover, in order to enhance the motivation of enterprises to increase the output of products bearing the Quality Emblem supplements are applied to wholesale prices (on such products), and a sizable portion of the supplement is channeled into the material incentive fund.

As we know, quite sizable initial outlays are required to put new products into production. For enterprises that are boldly putting innovations into production, then, broader opportunities for obtaining bank credit have been created. Higher product quality is being promoted not only by incentives, but also by economic penalties for departure from the requirements contained in standards. The essence of these penalties is that the value of the output of products which do not meet standards is omitted from the volume of sales, and the corresponding amount of profit is drained off into the budget.

But these steps by and large motivate product quality in the enterprise as a whole. Consequently, they cannot have a vigorous impact on higher quality during the actual process of production, i.e., within the enterprise. Yet it is in this sphere that the use values of products constituting high quality are created. That is why the economic reform granted the enterprise the right to apply various forms of material and moral incentives to motivate individual workers to produce products of high quality.

On the whole we can distinguish two fundamental factors involved here. First, there is the selection of the indicators adopted for assessment of quality; second, there is the use of the most optimal methods and forms of remuneration and worker bonuses for creation of quality products.

The first fact, i.e., proper selection of assessment criteria, has fundamental importance, since it reflects product quality as a whole and directs the efforts of workers toward solving the key problems in raising product quality.

An extensive list of different indicators is now in effect at enterprises. They include the following:

i. output of high-quality products and acceptance by the technical inspection division on the first sample (in machinebuilding, metal manufacturing, the woodworking industry, the construction fabrications industry, etc.);

ii. increase of the content of the principal substance in the product (in ferrous and nonferrous metallurgy, the chemical industry, etc.);

iii. above-plan output of products in superior grades (in light industry and the food industry, etc.);

iv. reduction of losses from rejects (in machinebuilding, ferrous and nonferrous metallurgy, the building materials industry, etc.);

v. adherence to prescribed manufacturing conditions, operating schedules, parameters and technical requirements (in the chemical industry, ferrous and nonferrous metallurgy, the food industry, etc.);

vi. reduction of the content of gangue in the ore (in the mining industry and elsewhere).

This gradation of assessment indicators confirms the need to take into account the peculiarities of production in the particular sector or industry and the specific features of the products produced.

The second factor--selection of optimum forms of material incentives--should also depend on a consideration of the various manifestations of initiative, diligence and conscientiousness of the workers.

At many enterprises in the republic the following indicators are taken as the criterion of the quality of the work by individual operatives: occupational skill; acceptance of products from the first sample; the relative share of products bearing the Quality Emblem or classified as first grade; the number of defects passed; the number of complaints, and so on.

The coefficient of the quality of work has recommended itself highly at a number of enterprises; it is defined as the difference between the maximum and actual values of the quality of work (i.e., between unity and total reduction of the coefficient for each case of deviation from the assigned quality indicators, norms or requirements).

For example, at the Voskhod Garment Factory in Chimkent there are several ways of stimulating product quality.

Workers who master more than 40 percent of all the work operations on the line receive an additional remuneration amounting to 10 percent of the wage rate on the basis of their occupational skill; they also receive another 10 percent for producing products bearing the state Quality Emblem.

The coefficient of the quality of work is taken into account in awarding bonuses to engineering and technical personnel (as much as 15 percent, which represents half of the maximum size of their bonus).

Worker incentives are, moreover, dependent upon fulfillment of the plan for acceptance of products on the first sample. If it is overfulfilled, there is a corresponding increase, in the case of underfulfillment, there is a decrease.

At the Sokolovsko-Sarbayskiy Mining and Ore Dressing Combine the awarding of bonuses to the workers of the ore dressing mills and certain other sections for overfulfillment of output quotas or shift assignments also depends on fulfillment of the plan for product quality.

For instance, the regulation on awarding of bonuses to separator workers in Section No 3 of the ore crushing and dressing mill calls for a bonus amounting to 25 percent of the piece rate to be paid for fulfillment of quotas and 3 percent for each percentage of overfulfillment, but only if the plan for content of the industrial product (its iron content) is fulfilled. The result of these rigid requirements concerning product quality was that in 1978 the combine's principal product--pellets--was awarded the state Quality Emblem.

But at many enterprises in the republic material incentives still do not meet present-day requirements. Not uncommonly workers are motivated to fulfill the plan regardless of indicators of product quality, which are either not taken into account at all or serve only as an additional incentive condition. The quality indicators assigned for incentive purposes are not sound or clear enough. Yet creative utilization of progressive know-how in applying material incentives to the output of high-quality products has contributed a great deal to solving this most important economic problem.

We will accordingly examine certain forms of remuneration and bonus systems in effect at advanced enterprises in the country where high-quality indicators have been achieved.

Remuneration by the Job

As we know, remuneration on the basis of piece rates is by nature aimed at increasing the amount of products produced. Consequently, sufficient attention is not paid to improvement of its quality when this system is used. Cases are not uncommon where a worker who has fulfilled his output quota and maintained excellent product quality will have smaller earnings than a worker who has substantially overfulfilled the quota, but whose product quality has been poor.

The piece-bonus system of remuneration, which encourages not only fulfillment of the output quota, but also product quality, is therefore more effective.

At many enterprises a differentiated form of piece-bonus remuneration was first established so as to take into account the percentage of acceptance of products on the first sample. But as time passed its defects were exposed. The principal thing was that the size of the bonus based on quality lost out to a considerable extent when compared to the supplemental remuneration for overfulfillment of the quota.

Remuneration on the basis of time worked is more suitable to encouragement of product quality. It is particularly advisable in experimental production sections and at enterprises with regulated processing conditions and an "imposed" pace of operation, where the technology itself guarantees quantitative output of the product. But mere remuneration based on the time worked does not in and of itself motivate the worker to improve the quality of the product produced either. Moreover, it does not encourage a rise of labor productivity and increased product output.

There was a need to find forms of remuneration which would promote a rise in all the components of production efficiency and would incorporate in itself the virtues of remuneration by the piece and by time worked.

One such successful form of remuneration is remuneration by the job, the basis of which is an assignment for the shift (referred to as the job) which is based on a sufficiently strenuous quota.

Remuneration by the job is most effective when applied to individual operations and sections. The first workers to be switched from piece rates to work by the job should be those doing finishing operations in production of crucial parts that determine the precision of manufacturing and the cleanness of the surface, those in heat-treatment and metal-coating sections, in machine shops, assembly shops, and so on. In other words, in those places where particular attention must be paid to quality.

Switching that portion of the workers who perform the most crucial operations to remuneration by the job guarantees high product quality (assuming normal length of the workday, strict observance of prescribed manufacturing conditions, and sufficient strenuousness of the assignments derived from standards).

We will examine the use of this form of remuneration at the Taganrog Krasnyy Kotel'shchik Plant; there product quality depends mainly on the work of welders, so that remuneration by the job was applied to them. Its essence is this: no additional payment is made for overfulfillment of the job; an additional 20 percent of the wage rate is paid for fulfillment of the job; and another 20 percent is paid for acceptance of products on the first sample, i.e., for quality.

Consequently, the supplements in principle go up to 40 percent, and these incentives "work" equally for quantity and the quality of performance.

Introduction of remuneration by the job brought Krasnyy Kotel'shchik appreciable results almost immediately: acceptance of products on the first sample rose from 60 to 97 percent; the number of breakdowns of boilers produced for power stations dropped to two-thirteenths of what it had been, and annual time of operation of power generating units increased eightfold. At the same time labor productivity rose considerably.

Combined Motivation of Intensification and Quality of Work

The material incentive system is a rather complicated system made up of a large number of elements. They include wage rates, unit prices, work standards, bonuses, various supplements, skill classes, and also indicators characterizing the various specific aspects of the enterprise's economic performance.

The effectiveness of the material incentive system depends decisively on how effective its component elements operate in their respective domains. At the same time their combined use must be guaranteed--they must function purposefully and as a totality, promoting a rise in both the intensity of work and also its quality, rather than operating in isolation from one another.

The system of product quality incentives in effect at the Volga Association for Production of Passenger Cars (VAZ) meets these requirements.

The form of worker remuneration in effect there is aimed primarily at combined motivation of work. The motivational capabilities of the elements of the system are aimed at higher product quality, lower labor intensiveness and higher labor productivity. Moreover, working conditions of the workers and the character of production are taken into account on a differentiated basis.

The purposive remuneration at VAZ to meet a combination of goals is achieved because worker earnings are made up of three components: the share of earnings based on time worked, additional payment for fulfillment of normed assignments; and a bonus for lower labor intensiveness and higher labor productivity.

The share of earnings based on time worked consists in turn of payment at the piece rate, the supplement for occupational skill and the supplement for working conditions.

Let us examine how they motivate a higher quality of work.

Wage Rate. Under the new system of remuneration most VAZ workers are assigned a piece rate (though remuneration by the piece has itself been abolished). Moreover, for each skill class--depending on the nature of the work--standard rates have been established. But the earnings of workers in one class are not all the same: a difference occurs because of the impact of the various supplements and bonuses.

Whereas previously a worker's earnings were determined mainly by the class (complexity) of his job, under the new conditions the major portion of remuneration (wage rate) depends on the skill class earned. The "interval" between adjacent skill classes is large--12 percent. Achievement of a higher eligibility for remuneration on the basis of skill class is for the workers an important motivation for improvement of their qualifications, and this is conducive to higher labor productivity and product quality.

Supplement for Occupational Skill. The essence of this is that occupational skill of workers in one and the same skill class is taken into account on a differentiated basis. The reason is that quite often because of a slight difference in the complexity of operations the same class--and that means the same wage rate--is assigned both to an experimental worker who has mastered several operations and also to a new person who has mastered one or two operations. Within the bracket of each skill level, then, supplements at steps of 4, 8 and 12 percent have been introduced for the best workers.

For example, in the principal production operation the following conditions and indicators are taken into account in assigning these steps to the leading workers in various occupations:

1. manufacture of products without rejects and defects for a period of at least 6 months in succession, mastery of at least 70 percent of the operations in the team--a supplement of 4 percent applied to the wage rate;

ii. manufacture of products without rejects and defects and mastery of all operations in the team--supplement of 8 percent;

iii. manufacture of products without rejects and defects, mastery of all the operations in the team and at least half of the operations in the section--supplement of 12 percent.

The various quantitative yardsticks used to measure occupational skill were also sought for other categories of workers.

We should mention specifically that to qualify for the maximum supplement on the basis of skill one must work at least 3 years in the same team. Aside from everything else, the supplement for occupational skill cuts down on personnel turnover.

Supplement for Working Conditions. As we know, payment of a supplement for work under harmful and especially harmful conditions has been generally accepted. At VAZ supplements were also introduced for the strenuousness and monotony of the work. They are established on the basis of a detailed assessment of the actual conditions of production and an entire site of microclimatic conditions (temperature, humidity, rate of air movement, concentration of toxic substances and dust, noise level, vibration, lighting, level of monotony of the work, body position, and so on).

The supplements for the strenuousness and monotony of work are fixed at steps of 4, 8, 12, 17, 22 and 27 percent depending on how difficult these conditions are.

"Cards on Working Conditions of the Work Station," which are compiled after a thorough analysis of working conditions right at work stations, serve as the principal document for establishing these supplements.

An effective program of technical and organizational measures aimed at mechanization and automation of work, at improvement of production conditions, at improvement of worker qualifications, at improvement of the work and rest schedule, at reduction of the monotony of the work, and so on, is then drafted.

As we have already said, the supplement for performance of normed assignments is the second component of the earnings of VAZ workers. These assignments, which are given in output-hours, are broken down to all the teams. The total supplement is determined according to a specific scale containing the intervals of fulfillment of the normed assignment (in percentages) and the corresponding amounts of the supplements (in percentages of the wage rate). The latter range from 1 to 4 percent for each percentage point of fulfillment of assignments over and above the established interval.

Of course, for these supplements to be effective, the work standards in effect must be strenuous and sound from the technical standpoint. For that reason no incentive is ordinarily paid for overfulfillment of normed assignments. The worker is required to perform only the quota, but at a good level of quality.

The absence of any sort of unit prices--that is, exclusive use of a time standard--is an essential feature of the system of remuneration at VAZ. This compels the worker to aim at optimality and quality of his work rather than at piece-rate earnings as a function of the number of products produced (often of low quality).

Another virtue is that specialists are relieved of the work of annual computation and revisions of tens of thousands of unit prices, and the number of primary documents used to compute earnings has been substantially reduced.

The total supplement is distributed among members of the team so as to take into account the worker's skill class and his individual performance. The chief of the shop and foreman are entitled to reduce by as much as 50 percent the supplement of workers who have not fulfilled quotas for a month and also to reduce or even to withhold this supplement in the case of workers who have committed violations of technological discipline or whose quality of performance has been low.

The third component of the earnings of VAZ workers is the bonus for lower labor intensiveness and higher labor productivity. The effect of this bonus as an incentive is aimed at achievement of minimum expenditures of labor for each workpiece or operation. Its size depends on the ratio between the actual labor intensiveness achieved in the month and the calculated base labor intensiveness. The value of the latter is constantly dropping and is set so that when it is achieved by all the teams, the rated labor intensiveness of the product is achieved for the plant as a whole.

If the base labor intensiveness is achieved for the month, the team is awarded a bonus in the amount of 20 percent of wage rates; if it is exceeded, the bonus is reduced (according to a fixed scale); if it is exceeded by more than 4 percent, the bonus is not paid. The bonus payment scale is so devised that a reduction of labor intensiveness increases the bonus correspondingly. In this case labor productivity increases faster than wages.

In the final analysis the bonus for lower labor intensiveness helps to speed up attainment of the plant's rated capacities. But at the same time it is also a good incentive for higher product quality, and a high level of workmanship must be maintained for the bonus to be awarded.

It is also important to emphasize that the size of the bonus for excessively "zealous" reduction of labor intensiveness is strictly limited so that an excessively large growth of output will not be detrimental to the quality of work.

Bonuses paid from the fund of deductions for export deliveries serve as a powerful additional incentive encouraging product quality at VAZ. The basis for their payment is fulfillment of indicators of the quality of work assigned for all production subdivisions of the plant (teams, sections, shops, divisions and staff services).

For example, the quality standard--allowed number of rejects, defects, or departures from the prescribed process parameters per 1,000 machine-sets--figures as such an indicator for the team of leading workers in the principal production operation.

If the standard has been met, the team is awarded 10 percent of wage rates. If rejects and defects are reduced below the standard, another 5 percent is awarded, and the bonus is reduced if the standard is exceeded.

In addition, if a high level of workmanship is achieved (by a point system), an additional 5 percent of the wage rate is awarded.

Consequently, the maximum size of this bonus is 20 percent. It is, moreover, a mandatory condition for payment of a bonus that the team have the plant certificate of product quality or quality of work, which is issued for a period up to 1 year when a given quality standard is met and there are no violations of production technology.

The personal contribution of each worker is taken into account when the bonus awarded to the entire team is distributed among the workers.

At many enterprises of the country, including some in Kazakhstan, experience has been gained with moral incentives. The awarding of honorary titles, the placement of names on the plant, rayon or city Honor Roll, the awarding of honorary certificates, presentation of pennants, and other moral incentives are being used effectively to raise product quality. At the same time these measures are closely combined with material incentives. For example, in the system of the Kazakh Ministry of Local Industry workers who have been awarded the title "Quality Achiever" are awarded a bonus of 30 rubles from the material incentive fund and are also paid an additional 8-10 percent of the piece rate (or salary) under the current bonus system for a period of 1 year.

At enterprises in the republic's light industry the awarding of the titles "Craftsman With Gold Hands," "Best Young Worker," and "Quality Achiever" has performed well as a moral incentive.

There is a large range of moral incentives. For that reason, as experience shows, when regulations on moral incentives are being drafted, difficulties arise in choosing the qualifying conditions and indicators of this type of incentive.

One can accordingly recommend the qualifying conditions and indicators for moral incentives of product quality that are in effect at many enterprises.

The title "Quality Achiever" is awarded to workers who for 6 months have fulfilled the following indicators: acceptance of products by the technical inspection division on the first sample; performance or overfulfillment of output quotas (assignments); strict observance of technological and production discipline; exemplary upkeep of the work station and equipment. Workers who have earned the title "Quality Achiever" are paid a quarterly bonus in the amount of 10 percent of their earnings.

The title "Quality-Achieving Section (Team)" is awarded for fulfillment of these indicators: percentage of acceptance of products on the first sample equal to the assigned standard for the previous 6 months; fulfillment of the plan for output; systematic reduction of product returns from other sections or from consumers; perfect record concerning violations of technological and work discipline, and other indicators.

The collective which has been awarded this honorary title is presented a pennant, and every worker or engineer and technician is paid a bonus ranging from 10 to 25 rubles.

The methods of material and moral incentives make it possible to achieve a great deal when they are properly used.

Creative use of the advanced know-how we have discussed to motivate the output of high quality products is one type of potential for raising production efficiency and the quality of performance.

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NEW SHEREMET'YEVO AIR TERMINAL TO BE READIED FOR MOSCOW OLYMPICS

Moscow GUDOK in Russian 28 Dec 79 p 4

[Article by Ye. Frolova: "Past the Grove and to the Clouds"]

[Text] When the Olympic Games begin in Moscow, all the capital's airports taken together--Sheremet'yevo, Vnukovo and Domodedovo--will daily serve up to 60,000 passengers and, in all, will receive more than a million guests from all countries of the world. This is why it was decided to build a new airport for the capital city at Sheremet'yevo.

A straight and wide superhighway stretches to the horizon. We go past a birch grove and rush along the asphalt ribbon of road that enters into the large building of the air terminal, one which reminds you of a non-closed polyhedron when looking at it on a map. Its exterior perimeter stretches almost a kilometer. The inscription, visible from afar, "Moscow, Sheremet'yevo-2," is to be found on the pediment of the high portion of the building. The nine-story wing of the building, the central portion of which reaches a height of almost 40 meters, was erected from steel structures. The aluminum façade and the tinted glass give the architectural ensemble a remarkable lightness and smartness.

Now let's look around at the airport complex. On the first floor is situated a spacious room for awaiting the arrival of passengers, on the second floor is the waiting room for departing flights and on the third is the waiting room for passengers in transit. The total usable floor-space of all facilities is 85,000 square meters, while the volume is 580,000 cubic meters. The Sheremet'yevo-2 air terminal will serve 2,100 passengers an hour, which means 6 million passengers a year!

A huge board attracts attention to itself in the center of the room where one awaits departing flights. By glancing at it, you can obtain information on the flight that is of interest to you.

Along the sides of the main lobby are facilities for passing through customs inspection, registration of tickets and checking of baggage. There are telephones, a post office, a bank for exchanging currency and newsstands to serve you.

The registration of passengers and baggage is performed at 48 counters in a period of some 5 to 7 minutes with the help of computers. Here are located scales for use when baggage is taken away, displays, telephones and speaking devices. The baggage enters the stowage facilities along a conveyor belt.

What other conveniences are there? You can board the airplane directly along a boarding ramp from the second floor without leaving the air terminal.

What if you have flown in? You also walk through a boarding ramp from the airplane into the main distribution-and-access corridor of the air terminal. From here you go down a stairway or escalator to the first floor into the incoming-flights lobby, where you perform all the necessary operations, while you claim your baggage in one of the neighboring rooms, where automatic conveyor belts function non-stop. After customs examination, you move into the waiting room.

You can look at a film, listen to a lecture and read newspapers and magazines in the conference hall. Press conferences will be held here. All the seats in the hall are equipped with installations for simultaneous translation.

There are restaurants, a banquet hall, bars and lunch rooms for the service of the passengers. All the facilities in the complex are equipped with a system of ventilation and air conditioning.

And if you go out onto the street, you can travel along a broad avenue, past the forest and to a hotel.

The apron is equipped with centralized refueling of airplanes. The fuel is distributed from the storage depot to the pumping columns along main fuel lines. The system ensures simultaneous filling up of eight winged vehicles. In all there are 19 locations for parking airplanes.

The airport complex is being built by the West German firm of Ritterbau of the Salzgitter concern in conjunction with Soviet construction organizations under a contract concluded with the All-Union "Soyuzvneshstroyimport" [All-Union Foreign Construction Imports?] Association. The director of construction, [Klaus Lapanske], reported: "We shall turn over the object by the specified deadline--31 December 1979!".

It remains to be added that offices of more than 80 foreign aviation companies will be located in the tall portion of the new architectural complex. The Soviet line Aeroflot is one of the world's largest aviation companies. Our country is always ready to receive guests.

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TRANSPORTATION

UDC 629.424.11

MODERN SOVIET PASSENGER LOCOMOTIVES DESCRIBED

Moscow ZHELEZNODOROZHNYY TRANSPORT in Russian No 8, 1979, signed to press 30 Jul 79 pp 36-41

[Article by Yu. V. Khlebnikov, candidate of technical sciences, chief designer for locomotive construction at the Kolomenskiy Locomotive Plant]

[Text] The Kolomenskiy Locomotive Plant imeni V. V. Kuybyshev is the oldest locomotive-building enterprise in our country. Before the revolution and in the first period of Soviet power, the plan produced steam locomotives and also built bridge structures, steamships, diesel boats, automobiles, streetcars and other equipment.

A locomotive rated at 600 horsepower was manufactured at the plant in 1931. The beginning of industrial production of locomotives was thereby established. Production of the Eel-series locomotives with diesel engines of our own manufacture continued until 1941. In 1932, the Kolomenskiy plant, working together with the Moscow plant "Dinamo" built an electric locomotive rated at 2760 hp. The plant produced the VL22-series electric locomotive until the outbreak of the Great Patriotic War.

In 1956, carrying out the decisions of the 20 th CPSU Congress, the Kolomenskiy plant ceased production of steam locomotives and began to manufacture the more contemporary and economical diesel locomotives. The second generation of diesel locomotive construction at the plant is associated with the production of the TEZ locomotives rated at 4000 hp in two units. At first these locomotives were assembled following blueprints from the Khar'kovskiy plant imeni V. A. Malyshev. The plant manufactured the diesel engines for the locomotives itself, while it received the chassis (the body and trucks) from Voroshilovgrad, where the flow-line production of these parts had been organized. Beginning in 1958, the plant began to manufacture locomotives rated at 3000 hp per unit according to blueprints from its own design collective.

Directions for Improvement

The plant began production of TEP60 passenger locomotives with a design speed of 160 km/hour in 1960. The tests of a locomotive with speeds up to 190 km/hour, conducted in 1961, demonstrated the good dynamic and tractive properties of its chassis, which was especially designed for high speed.

The chassis of the TEP60 is an original design with soft leaf-spring suspension. Elastic transverse displacement of all axles relative to the truck frame and free complimentary speed pick-up of the axle of the middle wheel pair relative to the body of the journal box is provided in the journal box suspension phase. This improves the tractive properties of the chassis and reduces the dynamic effect on the track. Mounting an electric traction motor on the truck frame and transmission of torque to the wheel pairs using an elastic mechanism with a full shaft permitted us to reduce the dynamic load on the motor elements and increase its service life, to reduce the unsprung weight of the truck and, consequently, to reduce the harmful effect on the rails.

It is necessary to note that the decision for development of a similar truck design differing fundamentally from the truck designs of the TEZ locomotives met with serious objections on the part of a number of specialists at that time. Subsequently, however, several years of experience in their use confirmed the progressive nature of this engineering solution. By a requirement of the Ministry of Transportation, the trucks for the new generation of freight locomotives rated at 4000 hp and above should be developed taking into consideration the ideas incorporated during design of the trucks for the TEP60.

The constant improvement of the TEP60s, which is being conducted with the full mutual understanding of the producer plant, the supplier for the electrical traction equipment (the Khar'kov plant "Elektrotyazhmash") and the locomotive depots using the locomotives, has permitted us to create a reliable locomotive which enjoys the acceptance and the faith of the railroad workers. The 1000th TEP60 will pass through the doors of the plant and onto the mainlines of the country in September 1979. More than 400 of these locomotives deservingly bear the state's Mark of Quality.

In the year of the production of the 1000 TEP60 it is interesting to compare several figures. The first steam engine built following blueprints from the plant's designers was rated at 300 hp (1873); the first diesel locomotive was rated at 600 hp (1931). The first passenger locomotive rated at 4000 hp per unit was built in 1973, and in the current year a passenger locomotive rated at 6000 hp per unit will pass through the plant's doors for operational testing.

The practical possibility of creating locomotives rated at 4000 hp and 6000 hp per unit became possible due to successes achieved during the Ninth Five-Year Plan in the area of creating economic diesel engines with a high unit power rating, given the weight-dimensions indices accepted for locomotive operation. These locomotives may be rated at 8000 and 12000 hp when operated in two units. The basic parameters for passenger locomotives and electric engines are presented in Table 1.

Table 1

Indicators	TEP60	TEP70	TEP75	ChS4	ChS200	ChS2
Axle formula	3_o-3_o	3_o-3_o	3_o-3_o	3_o-3_o	2_o-2_o+ 2_o-2_o	3_o-3_o
Power on the traction motor shafts during continuous operation, kW	1830	2480	3520	3920	8000	3700
Weight in service state, kg	126	129	138	123	152	123
Load on a rail from a wheel pair, kg	21	21.5	23	20.5	19	20.5
Continuous operation:						
tractive force, tf	12.5	17.0	18.0	16.8	14.3	13.7
speed, km/hour	50	50	70	108	200	97
Length between axes of automatic coupler, mm	19250	21700	21700	19980	33080	18920
Fuel reserve, kg	5000	6000	6000	--	--	--
Sand reserve, kg	600	800	800	2400		1875

A plan for creating powerful passenger locomotives by stages, taking into consideration modern requirements for new locomotives and the necessity for creating design stockpiles of such assemblies as the chassis, electric breaks, new cooling systems for the coolant for the diesel engine and the electric machines, brake cylinders with adjustable rod excursion, hydraulic oscillation dampers, etc was developed at the plant in 1972. In accordance with this plan, the plant manufactured a group of locomotives rated at 4000 hp with four-cycle diesel engines of the plant's design and with ac/dc power lines from the "Elektrotyazhmash" plant during the period 1973-1978.

These locomotives were produced on chassis analogous to those used in the series-produced TEP60, but with an increase in wheel diameter from 1050 to 1200 mm and without the electric brake. Creating a group of such machines permitted us to use-test the accepted design solutions for the assemblies and equipment in a brief time. The operation of the mufflers on the diesel exhaust and the noise suppressor on the intake for the axial-flow fan (which was installed instead of the customary centrifugal fans) for the electric machinery cooling system was tested in addition, and the efficiency of the centralized system for supplying cooling air to the electric machinery and equipment was studied.

The total on-line time for 7 TEP70s reached 2 million km in 1979. Research performed on the Belorussian line showed that TEP70, rated at 4000 hp, insures compliance with existing train traffic schedules with a weight of about 1000 tons, a weight presently being pulled by two 2TEP60 units with a total rated power of 6000 hp.

Creating the TEP75 rated at 6000 hp was specified in the second stage of the plan's realization. The main units of the chassis (the truck and body) and the auxillary equipment for this locomotive have been standardized (for locomotives rated at 4000 and 6000 hp per unit). An experimental prototype of the TEP75 was built in December 1975. On it, in addition to equipment providing for the traditional functions of pulling and braking, an 800 kW generator and equipment for centralized electrical supply to the cars was installed.

Tests of the TEP75 at speeds up to 120 km/hour (limited by condition of the track) and control dynamics-and-strength testing of the chassis on a high-speed test ground at speeds up to 195 km/hour were conducted in 1976-1977. In 1978 two TEP70s with 3200 kW electric-braking systems were manufactured at the plant and sent out for operational testing.

To begin with, a new three-axle truck with individual axle drive, a soft two-stage leaf-spring suspension (individual in the journal box phase) and an elastic connection with the body having varying rigidity, the lack of initial torque during relative turning of the body and trucks, as well as the lack of friction in the body-support units on the truck frame are the distinguishing features of the unitized chassis.

The increase in unit power and the installation of supplementary equipment result in increased locomotive weight and, consequently, make more complicated the creation of engines iwth an axle load of 21.5 tons (in the TEP70), 23 tons (in the TEP75) and a design speed of 160 km/hour, in which the dynamic effect on the rails should not exceed existing values according to the requirements of the Ministry of Transportation. Therefore, creating locomotives with a great unit-power rating with the installation of assembly units (the diesel engine and the electrical equipment) of specified weight and parameters required the development of new systems and a search for ways to reduce the chassis weight and the weight of the locomotive's equipment while insuring adequate work capability and reliability.

While solving the problem of creating locomotives with a unit-power rating of 4000 and 6000 hp, primary attention was paid to development of the following main units: the unitized body with a specific weight of less than that of series-produced locomotives and insuring the rearrangement of the auxillary units according to the layout without altering the power schematic; the unitized truck with soft two-stage leaf-spring suspension, less weight and better tractive and dynamic properties than those of series-produced passenger locomotives; effective systems for cooling the water, oil and the supercharged air for the diesel engine and the electric machinery and the design of a small, powerful electric brake unit.

The weight of the locomotives was reduced significantly by using an efficient power schematic and economical profiles made from low-alloy steel in the body design, as well as by using aluminum alloys in the detachable sections of the top and the exterior shell of the body sidewalls. The load-bearing body is a truss-and-cross-stay design. It is a single, welded structure made from the frame, sidewalls, front parts and replaceable top parts. The frame members are produced from low-alloy steel. The front parts are strengthened. The design of the body is divided into several production-process groups according to assembly conditions: the frame, welded from two end sections, two intermediate, and a midsection; sidewall frameworks and the framework for the front parts.

The ducts for the centralized air-supply system for the electric machinery and equipment are included in the power schematic of the frame. The body sidewalls are first welded as individual units. The framework of the sidewalls is formed from transverse bands, supports and cross-stays, insuring strength and rigidity of the design. The truss-and-cross-stay type of body permits us to place the window openings on the vertical wall of the body with minimum weight and minimum loss of vertical rigidity.

The air intake openings for the diesel engine and the electric machinery cooling systems are situated on the vertical sidewall of the body in the area in which dust and smoke enter to the least extent. In the TEP70, only the openings for intake and exhaust of the air cooling the electric-brake resistors open on the sloped surface of the top, whereas in the TEP75, there are hatches for installing the diesel's supercharged air cooling units. The windows in the engineer's cabin and the on-the-body sidewalls are installed in the plane of the outer surface, which improves the external appearance and simplifies mechanized cleaning and washing of the locomotive.

By design, the detachable top of the body consists of individual detachable sections set in place over the engine room and two sections over the engineer's cabins. This design permits modular disassembly and repair of the auxillary equipment units to be carried out. The power and facing elements of the top are made from sheets and section-rolled aluminum.

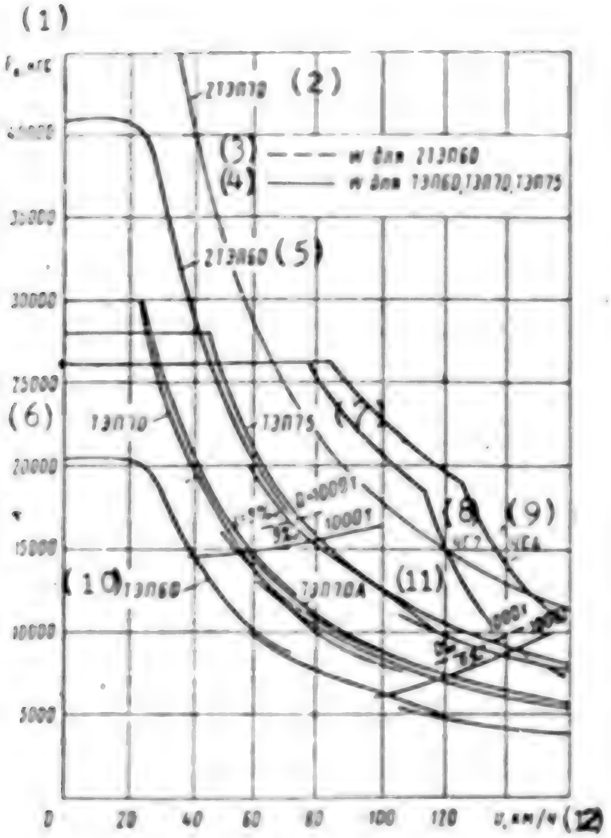
Advanced Chassis Designs

It was necessary to make a unitized chassis for 4000- and 6000-horsepower locomotives on two three-axle trucks with the load on the rail from the axle of a wheel pair being 21.5 tons and 23 tons respectively in the service state. Therefore, in addition to solving the questions of reducing the weight, it was necessary to develop new (in comparison with series-produced passenger locomotives) assemblies for connecting the body to the truck and for the trucks themselves, with the aim of reducing the dynamic effect on the track and improving the running properties of the locomotive.

Under testing at speeds up to 190 km/hour in 1961, the chassis of the series-produced 3000-horsepower locomotive showed good dynamic and running properties; in this light, it was permitted to use the locomotive at speeds up to 160 km/hour.

In designing the new chassis and selecting the schematic diagram between its elements, the modern tendency of the theory of engines and machinery toward the creating of statically determinable units without excessive connections was taken into consideration. Elimination of these excessive connections does not increase the mobility of the machine, but it reduces the requirements for accuracy in preparing the links and increases the reliability and reduces harmful reactions. Realization of such a trend is associated with the development of a chassis having free and elastic displacement of elements.

An analysis of domestic and foreign materials carried out at the plant showed that the creation of a high-speed locomotive with high unit power and good dynamic performance and comfort indices requires the development of a number of functional units for the chassis. They should insure the following: elastic separation of the chassis masses (the wheel pairs, the truck frames, the body) in the vertical plane; elastic connection between the body and the truck frame in the horizontal plane which excludes the initial moment of resistance relative to their displacement and the moment of resistance to frictional forces as a function of the state of the surfaces and the use conditions; reduction of the dynamic relief of the wheel pairs; reduction of the unsprung weight of the truck; effective damping of oscillations from the masses of the chassis suspension system, particularly those which are leaf sprung, which have minimal internal resistance; interaction between the design and the schematic decisions which influence the characteristics of movement on straight and curved sections of the line. Here it was necessary to produce a design which was comfortable and simple to repair and to use, with a minimum number of assemblies whose parts are subjected to frictional wear.



KEY:

1. F_k, kgf
2. 2TEP70
3. -- W for 2TEP60
4. __ W for TEP60, TEP70, TEP75
5. 2TEP60
6. TEP70
7. TEP75
8. ChS2
9. ChS4
10. TEP60
11. TEP70A
12. v, km/hour

The structural schematic of the new chassis part of the locomotive and its parameters were selected during the design phase so that increasing the static load from a wheel pair to 23 tons on the rails would not cause an increase in the dynamic effect on the track, as compared with the corresponding values for series-produced passenger locomotives.

The value of the static flexing of the leaf springs of the first phase was selected with regard for the presence of flexible joints in the assemblies connecting the journal boxes with the truck frame and the installation of springs on rubber shock absorbers, but without dampers. The use of cylindrical springs as supports for the body on the truck frame permits us to join the functions of the second phase of leaf-spring suspension and the systems for flexible transverse and angular connections between the body and the truck. This insures a minimum weight for this assembly while still providing good dynamic qualities for the chassis.

The locomotive body is supported on the upper plates of side members of the frame of two three-axle trucks by four sets of springs; each set consists of four springs. The frame of each truck is supported on the wheel pairs by cylindrical springs installed on special lugs on the journal box body. The exclusive use of cylindrical springs which have much give to them in the suspension system may result in coincidence of the free vibration frequencies of the locomotive's suspension system and the perturbation frequency from the track and the onset of resonance oscillations. Hydraulic suppressors of vertical and horizontal oscillations are installed between the truck frame and the body to avert this phenomenon.

The trucks of the new locomotives are three-axle, with individual axle drive, mounting of the electric traction motors and the gearbox to the frame and individual leaf-spring suspension of each wheel pair relative to the frame. The journal boxes with rolling-contact bearings are connected to the truck frame by dogs. All of the wheel pairs may shift elastically ± 8 mm relative to the truck frame (due to elastic hinges in the tips of the dogs) while the middle axles have an additional ± 14 mm of free axial displacement relative to the body of the journal box.

The tractive and breaking forces from the truck frame are transmitted to the body at the level of the wheel-pair axle via a king-pin assembly, insuring the free turning and relative displacement of the truck frame during rolling. The free transverse displacement of the truck relative to the body is ± 30 mm; the supplementary elastic displacement with the inclusion of the springs of a control device is also ± 30 mm. Thus during transverse truck displacement relative to the body, the springs of the second suspension phase are brought into play first, then the springs of the king-pin assembly. This insures an elastic connection of variable rigidity between the body and the trucks and the absence of the initial moment of torque and the moment of friction forces.

The truck frame is supported by the brackets on the journal box body via rubber-metal shock absorbers and cylindrical springs. The assembly for connecting the journal box to the truck frame has ten-15 percent less rigidity of the transverse connection in comparison with series-produced designs.

A new drive system for the motor-wheel unit wi[illegible]action motor and gearbox being suspended from the truck frame wa[illegible]ed with the aim of reducing the total and the unsprung weight of the t[illegible]k, expanding the locomotive's area of use, based on the track quality and reduction of the dynamic effect on the elastic coupling elements which transfer the torque from the traction motor armature to the wheels. The wheel pair drive design does not contain rubbing parts, and is executed in the form of a full Cardan shaft encompassing the wheel pair axle. The slave gear of the traction gearbox is mounted on two rolling-contact bearings, inspection of which can be performed without disassembling the wheel pair.

A new mechanism for transmitting power from the traction motor to the wheel pair permitted us to create a wheel pair with wheels 1220 mm in diameter and having an unsprung weight of 2767 kg whereas in the TEP60, with a wheel diameter of 1050 mm, this weight is 2575 kg. Eliminating floating supports, balanced leaf-spring suspension and the use of cylindrical springs in the design for supporting the abody on the truck, the installation of a king-pin unit for transmitting the drawing and braking forces at the level of the wheel axle and the use of rolling-contact bearings in the traction gearbox permitted us to create a truck design which is simple to service and repair, which has good properties and a minimum of assemblies subjected to mechanical wear. The basic parameters of the locomotive's chassis are presented in Table 2.

Reliable Economic Equipment

The creation of cooling systems insuring reliable operation of the power plant and the electric machines for locomotives having a high power rating per unit required particular attention to reduction of the weight of the equipment and to the economical use of the useful volume of the body.

In particular, a single axial-flow fan with efficiency of 0.85-0.90 was used to supply air to the electric machines and equipment instead of the customary two to four centrifugal fans with efficiency ratings of 0.6-0.65. This decision signficantly decreased the power expended for the locomotive's auxillary needs, reduced the number of units, freed useful space in the body and reduced the weight of the locomotive. The problem of improving air filtration is also resolved more simply with the installation of a single fan.

The axial-flow fan brings in air from the sides of the body through a set of filters and forces it in through air conduits included in the power schematic of the body frame. It goes to the generator, the electric traction motors, the rectifier unit and other equipment. The fan permits seasonal adjustment of air consumption. The filter unit consists of a set of replaceable cassettes installed in a separate compartment on the top. Installation and removal of the cassettes is done through hatches situated below them. During heavy snow and dust storms, air intake may come from within the body. Decisions tested in multi-year use on the TEP60s are used for cooling the water, oil and supercharged air of the diesel engine.

Table 2

Characteristics	TEP60	TEP70 (beginning with No. 8)	TEP75
Axle formula	33-00	33-00	33-00
Length between axes of automatic coupler, mm	19250	21700	21700
Distance between the axles of the outermost wheel pairs of the trucks, mm	15000	16850	16850
Wheel base of a truck, mm	4600	4300	4300
Wheel diameter along running surface, mm	1050	1220	1220
Weight of truck with body supports, mm (sic!)	27150	26263	26760
Unsprung weight of 1 wheel pair, kg	2574	2767	2755
Static flexing, mm:			
journal box phase	94	60	60
second phase	10	110	120

A 20ChN26/26 diesel engine has been installed in the TEP75. Two-stage gas turbine supercharging is used in it with the air being cooled after the first and second turbocharger stages; the exhaust collectors are water-cooled, which insures high heat dissipation. The diesel engine's water, oil and supercharged air cooling units are the first in domestic locomotive construction to be designed in the form of a separate three-contour system with cooling of the supercharger air directly by air from the atmosphere without an intermediate coolant. The designs which were used permitted us to avoid installation of the conventional water-air cooler on the diesel. All of this has increased the efficiency of the cooling system, reduced the total weight of the locomotive and reduced the power take-off for the cooling units.

The diesel engine's system for cooling the water, oil and supercharged air on the TEP70 is double-contoured. In its design, the cooling unit is executed in the form of two shaft-like units, which permitted us to free the roof over the engine for ease in servicing it while in use.

On the TEP70 there are two and on the TEP75 there are three fans which bring in air through radiators of the cooling units. The fans are turned by hydraulic motors from hydrostatic drive systems. Temperature regulating devices which automatically control the hydraulic system's relief valves regulate the performance of the hydrostatic drive system. Within the limits of the selected temperature interval, the regulating system

The TEP60 locomotive, awarded the State Mark of Quality

opens louvers and smoothly changes the fan's rpm as a function of the changing temperature state of the coolants.

An electric brake system insuring service braking with the assigned speed being maintained automatically, service stop brake action, with the assigned magnitude of braking force and emergency braking with maximum application of braking force was specified on the TEP70. The brake control schematic specifies that the electric brake be replaced by a friction brake with electro-pneumatic controls at low speeds.

The electric brake unit is situated in a removable section of the roof over the instrument chamber and consists of two sets of non-ohmic brake band resistors and two motor-fan installations. Each of them consists of an axial-flow fan drive by a 55-kilowatt, series-wound dc series motor. The motor-fan gets electricity from the brake band resistors, and, therefore, its performance depends directly on the load on the traction motors operating in the generator mode. The system which was used substantially increases the efficiency of cooling the brake resistors and provides for compactness of the removable brake unit, the specific weight of which is 0.55-0.60 kg/kW.

The TEP70, rated at 4000 hp

The efficient system for cooling the diesel engine and the electric machinery which was developed for the TEP70 and the TEP75 insure their constant operation with a minimum power take-off for their own needs (Table 3).

The electrical circuit of the TEP70 permits us to load the diesel engine-generator to check its operation (and that of the automatic regulation system) using the electric brake resistors without connecting them to the station rheostats. The tractive characteristics of the locomotive throughout the entire speed range are insured by an automatic electrical transmission system.

Table 3

Power take-off at the diesel's rated performance	TEP60		TEP70		TEP75	
	+20°C	+40°C	+20°C	+40°C	+20°C	+40°
To drive the water, oil and air cooling fans, HP	164	185	126.4	197.5	222.8	279
To drive cooling fan for electric machines and equipment, HP	115	110	118.3	110.7	256	242
Total consumption for own needs, HP	377.0	394	300	362	579	616
Fraction total consumption is of duty rating, %	12.6	13.0	7.5	9.0	9.65	10.3

The TEP70's electrical equipment includes electrical transmission of ac/dc power. The transmission line consists of a synchronous traction generator, a rectifier unit, electric traction motors and a system for regulating the external performance parameters.

The TEP75 is equipped with an A-713 traction unit consisting of a synchronized traction generator and an electric power generator, a rectifier unit, traction motors, auxillary electrical machinery, a storage battery and instruments. The lack of a separately installed exciter is a distinctive feature of the TEP75's traction generator excitation system (as compared with the TEP70). In this case, the traction generator and the electrical generator are stimulated from a special winding in the latter via individual thyristors. The automatic regulation system of both generators is designed in the form of self-contained automatic control devices consisting of removable units.

The "Elektrotyazhmash" plant conducted bench tests which permitted them to propose using the TEP70's traction motor for the TEP75; this makes it possible to lower the weight of the trucks. A final decision will be made after use testing of the locomotive's tractive performance throughout its entire speed range. Because of the availability of the unified truck, this test may be conducted by replacing the traction motors right at the station where they are used.

* * * * *

The creation of passenger locomotives rated at 4000 and 6000 hp with a design speed of 160 km/hour and a load of 21.5 and 23 tons on the rails from the wheel pairs required the solution of complex and at times contradictory problems. Nevertheless, the bench, running and use tests which were conducted confirm the working capacity of the unitized designs created at the plant.

The TEP75, rated at 6000 hp

In particular, the tests showed that the chassis of the new locomotives is less sensitive to track conditions than those of series-produced locomotives. Horizontal accelerations of the body of the new chassis on straight sections with the track in good condition (permissible speed up to 200 km/hour) and when deteriorated were identical for practical purposes. When moving across switches onto a siding, acceleration of the body on the new chassis is 20-40 percent less than that of the series-production type. The new chassis also has better characteristics based on the dynamic effect on the track in the vertical plane. Thus on a high-speed section at a speed of 160 km/hour, the coefficient of vertical dynamics for the first stage of the new chassis is 23 percent less than that of the series-produced chassis, and over switches, it is 37 percent less. A locomotive with the new chassis enters curves smoothly and after a truck emerges from them, it returns to the initial position in line with the body.

A program is presently being carried out at the Kolomenskiy plant which specifies an increase in production of modern locomotives. The task of satisfying the country's rail transportation demands for powerful passenger locomotives will be successfully resolved.

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RAILROAD CAR MAINTENANCE ON MOSCOW RAILROAD

Moscow ZHELEZNODOROZHNYY TRANSPORT in Russian No 6, 1979 pp 23-27

[Article by B. G. Pogorelyy, Service Chief of the Moscow Railroad Car Maintenance Department: "Technical Maintenance of Railroad Cars under the New condition"]

[Text] Over the course of the past few years systematic work has been conducted on the Moscow Railroad with regard to developing the technical base for railroad car maintenance--the capacities of car depots have been strengthened, mechanized points for preparing cars for hauls have been created, points for technical maintenance have been re-equipped, and control posts have been furnished with up-to-date means of mechanization and automation.

The specialization of depots in sanitizing specific types of rolling stock has become an important measure, allowing the introduction of progressive methods in the depot repair of cars. At the present time, passenger cars are being repaired at eight of the railroad's depots, four enterprises have specialized in repairing container cars, and two in maintaining refrigerated rolling stock. The repair of other types of freight cars is carried out in the remaining depots. Specialization of the freight depots was implemented with consideration being given to a more complete satisfaction of the railroad's needs for rolling stock in good repair and guaranteeing the minmum distance which defective cars must travel to the repair facilities. For example, the Voskresensk Car Depot, which is located at a point where cement is loaded in bulk, carries out the repair of cement-carrying tank cars, and all the car depots of the Ryazansk Division repair tank cars carrying petroleum and gasoline. Depots located along the track followed by empty cars on their way to be loaded with ore and coal have specialized in the repair of gondola cars. In the distribution of the repair plan among enterprises consideration was also given to the needs of adjacent sections for rolling stock in good repair for the purpose of hauling farm produce, motor vehicles, etc.

All this has allowed not only the curtailment of inefficient freight-car runs but also the creation of conditions for organizing the repair process on an up-to-date basis, i.e., with the use in assembly shops of assembly-conveyor lines, supplied with special, highly productive equipment and efficient technological apparatus. In connection with the sharp reduction in the products list of aggregates and parts to be repaired, the objective prerequisites appeared for introducing assembly-line technology and complexes of specialized machinery into auxiliary preparation shops as well.

In the process which the railroad has carried out during the last few years of modernizing car depots most of them have introduced a progressive, assembly-line method of repairing cars and their basic aggregates, the comprehensive mechanization and automation of production processes, the scientific organization of labor, a system of quality controls in repairs, etc. The passenger depots have organized painting shops, specialized, highly mechanized sections for repairing electrical equipment, reducing-gear-Cardan drives of undercarriages, and other aggregates and parts. A great deal of attention has been paid to increasing the production areas of freight-car depots by means of lengthening assembly shops and creating truck shops. Because of this, by the beginning of the ensuring five-year plan practically all depots will have truck shops, while 60 percent will have lengthened assembly shops. A program of modernizing existing roller-bearing shops and organizing new ones has been carried out successfully. An efficient production base for the repair and maintenance of wheel pairs with roller bearings has been established, in particular, in the car-wheel shops of the Moscow III-Yaroslavskaya Car Depot, where highly productive Soviet and foreign equipment have been coordinated in an integrated complex.

The technology of refurbishing railroad cars has changed radically. At the present time assembly shops witness practically only the disassembly of the cars, the replacement of defective aggregates by previously repaired ones, work which has been done in preliminary repair shops, as well as the repair of frames and bodies. The saturation of the assembly shops with mechanized means and equipment for carrying out technical operations has considerably lightened the labor of the workers and made it highly productive. It should be emphasized that most of the assembly-conveyor lines, automated stands, and other means of mechanizing labor-consuming processes were made by the efforts of the car depots, based on developments by local creative groups.

Strengthening the capacities of the railroad depots and introducing industrial methods of repair have allowed a significant increase in labor productivity as well as an increase in the enterprises' production programs. In 1978 the monthly output per worker for the system as a whole amounted to 6.3 cars processed, while at progressive enterprises this figure was 6.9. Their output from repairs increased by 12 percent in comparison with the year 1970. The quality of car repair also increased substantially.

Likewise there has been rapid growth and improvement of facilities for the technical maintenance of cars in operation. Now in operation on the railroad are about 40 points which carry out current repairs of rolling stock, and a network of mechanized points has been set up to prepare cars for hauls; these points have 20 "Donbass" car-repairing machines in operation. Boxcars, flatcars, and specialized rolling stock are prepared for hauls with the aid of four "Likhobory" type car-repairing machines, whose design was developed by this railroad's innovators. Particular attention is being paid to preparation points which are located at stations where there is a concentration of empty cars, at places where mass loading occurs, and on routes followed by trains to the Kursk Magnetic Anomaly, as well as to coal mines, large industrial centers, and regions with well-developed agriculture. Well-planned supplying of preparation points for rolling stock with up-to-date, highly productive equipment, along with a constant improvement in the organization of their work, allowed the quality of refurbished cars to be increased annually by 2.5--3 percent, thereby increasing the railroad's load resources.

In accordance with Order No. 30Ts the railroad has activated work on lengthening the legs used on non-stop travel by trains, eliminating less active points and strengthening decisive points of technical and control-technical car maintenance. Their stations have had placed at their disposal approximately 80 km of ground lines and 82.5 km of air lines, 68 yards have been equippped with centralized systems for the protection of rolling stock, 38--with panels for the centralized testing of brakes, 74--with loudspeaker radio communication. Some 48 standarized PTO (Technical Maintenance Point) buildings have been constructed on the railroad. Technical car maintenance at all points has been organized in accordance with the multi-group and multi-crew method. Most of the PTO's have asphalt-paved served roads for transport, narrow-guage lines for self-powered repair units (the railroad has more than 100 of these), and mobile racks with spare parts and materials. Experience has shown that the widespread introduction of mechanized means in the PTO's, the creation of normal daily living conditions and a well-thought-out system of material and moral incentives facilitate not only the increase of labor productivity and work quality but also the consolidation and influx of new personnel. The station of Orekhovo-Zuyevo, located in a city with well-developed industry, may serve as an example. An outstanding sanitary and daily services combine was built here for the workers of the PTO. Narrow-guage lines were laid down in the areas between the tracks of the receiving and shipping yard, and running along these lines are self-powered repair units--a particular one for each technical group. There are also other structural facilities characterizing the present-day level of production organization at the PTO. As a result, after a comparatively brief period this station, having fully recruited its staff, was able to switch over to the four-crew, multi-group method of technically servicing trains. It should be noted that the self-powered repair units were "merged" into the technology of repairing rolling stock better at this PTO than anywhere else. A precise system for their prevention maintenance was organized. Each unit is put in for repairs at specified time periods and is replaced by another which has been repaired and received from the equipment reserves.

The creation of a complex of well-supplied points where cars are prepared for hauls and the strengthening of decisive PTO's have permitted the elimination of more than 80 less-active technical maintenance points and PKTO's (Draft Design Technical Sections) as well as the extension of guaranteed sections to lengths which are suitable for the locomotives' traction legs. At the present time the technical maintenance of freight trains is carried out only at stations where the locomotives are changed. The sole exception is the Sasovo station, where permanent inspection crews are maintained in order to insure the safe movement of trains continuing on from the Kuybyshev Railroad. The fact of the matter is that the Kuybyshev car workers still do not furnish a guaranteed responsibility for trains which continue on to the Rybnoye station, where the locomotives are changed.

Work on the extended sections has required the PTO workers to substantially improve the quality of preparing trains for runs and more skilled maintenance of important car assemblies. The most serious problem has been that of insuring the reliable operation of axle-box assemblies, inasmuch as the need has arisen to reveal not only the (obviously) defective axle-boxes but also those axle-boxes whose overheating could occur when the car travels over an extended section. Its successful solution was facilitated by the widespread application of the well-known operational experience of M. P. Batin, the senior inspector at the Perovo car depot. Now the railroad's progressive inspectors have worked out and are using in practice the methods of discovering by external signs defects as well in automatic brakes, automatic couplings, and other assemblies.

A great deal of attention is being devoted to organizing a reliable system for controlling the technical condition of rolling stock while en route. On the railroad's main lines and the Great Circumferential Ring automated posts have been established to observe axle-boxes with the aid of PONAB [Expansion unknown], located 40--60km. Morevoer, monitoring the condition of rolling stock on the extended sections is being carried out by train locomotive crews, traffic specialists, trackwalkers, and workers from other services.

Despite the great deal of work which has been done in the railroad's car system, there are still quite a few unresolved problems. The attention paid to refurbishing and maintaining cars is, unfortunately, still not sufficient everywhere. For example, the car system has developed in a complex manner on the Novomoskovskoye Division. Taking into consideration the experience of the Bryansk and Lyublino car depots, all freight depots were redesigned with the introduction of the assembly method of planned repairs of gondola cars, a network of points was created to prepare cars for hauls, repair and transport operations were mechanized on the decisive Uzlovaya PTO, car maintenance was organized efficiently at the smaller stations, and there is a precise, long-distance plan for the further development of a base for the repair and current maintenance of cars. All this facilitates the fact that all cars entering the division, regardless of their technical condition, are refurbished and issued in a loaded condition.

However, such a level of organization and technical supply with regard to car maintenance has not been attained in all the railroad's divisions. Not everywhere has the system of repairing and maintaining rolling stock provided such an effect. At a number of PTO's the quality of preparing rolling stock for runs still does not meet the proper requirments--cases of breakdown and delays of trains are allowed. Hence, the elevation of all enterprises to the level of the progressive ones is an important task for Moscow railroad-car workers.

Nevertheless, the results of operations conducted on the railroad must, as a whole, be evaluated positively: the lengthening of the guaranteed legs of the PTO's and the sections of non-stop train travel have been accompanied by a steady process of reducing car uncouplings at intermediate stations and train delays. Therefore, the preparation of the railroad's car-maintenace for a qualitatively new system of operation--the mass traffic of heavy and long trains on most of the mainline's sections consisted mainly of implementing measures of an organizational nature.

The car specialists have carefully and thoroughly analyzed the state of affairs with regard to the quality of technical car maintenance in PTO's, which are proposed to become pioneers in realizing new reserves in increasing the hauling capacity of densely crewded freight lines, and they have examined the characteristics of servicing rolling stock under these conditions.

Measures to insure the reliability of car assemblies in heavy and long trains were based upon the following prerequisites. Inasmuch as the sections of non-stop travel are not being lengthened, the train speeds do not exceed those which have been established, while the loads on the wheel-pair axes are practically not increased, hence, the operating conditions of the axle-box assemblies are not changed. Therefore, neither is there a change in the volume of work with respect to refurbishing the axle box of one car. Nevertheless, as a whole, considerably more efforts and funds must be expended on each long train than on a normal-length train. Furthermore, the quality of the inspection and repair of axle boxes and other important assemblies of rolling stock must be abruptly increased, since the consequences of uncoupling cars or delaying trains for the purpose of eliminating defects would be much more serious--the possibility of a by-pass or a crossover of long trains is excluded.

As the weight of a train increases, there is also an increase in the probability of parts of the automatic coupling apparatus breaking away, especially those which are extremely worn, those which have cracks and other defects, and there are increased requirements for strength in the frame elements of the cars. It is particularly important to insure the reliability of these assemblies in the case of trains made up of tank cars, since it is in such trains that the maximum weight is attained most often and, moreover, there arise additional resistances and dynamic effects from the liquid freight. Of primary importance is furnishing heavy trains with the specified brake pressure. The complexity in preparing the brakes lies in the fact that with the increased length of the trains there is also an increase in the number of the extended connections of the main brake lines and other places for potential leaks of compressed air.

Taking these and other characteristic of working with heavy trains into consideration, car maintenance developed and implemented specific organizational and technical measures with regard to servicing rolling stock under the new conditions. First of all, it was recognized as unfeasible to include in a train weighing 6,000 tons two-axle cars and those with people, as well as those with certain unusual and non-clearance freight loads. Also excluded in the make-up of such trains were cars equipped with conventional No. 320 air distributors.

The organization of the technical preparation of trains at each PTO was defined by a special technological process, and its quality is checked out personally by the shift supervisors. Regardless of the PTO's classification of the station where the trains are made up, the inspection of the cars in heavy trains is carried out with thorough [illegible]. In order to insure their non-stop travel over the guaranteed sections, the make-up stations carry out a mandatory [illegible] of axle grease into all the axle boxes with sliding bearings, and their inspection is carried out using M. F. [illegible]'s method. At some stations the rear section of the inlet-track areas have turned out to be lacking in grease-distributing columns and racks with spare parts. For this reason, in order to facilitate the work of the repair crews, a decision was adopted temporarily, prior to the development of grease lines and the manufacture of racks, to set up in [illegible] parts of the yards modest-sized containers with axle grease and interchangeable cases with bearings, brake shoes, etc.

After meticulously and thoroughly analyzing the operational requirements of the instructions in effect for the automatic coupling apparatus of frame components of cars, we considered it possible not to harden them. Nevertheless, in order to prevent the breaking away or disconnection of trains, the car inspectors issued supplementary instructions on the need for a more careful inspection of the head and tail of each automatic coupling in the places with the greatest probability for the appearance of cracks, also on the need for mandatory check-ups on the action of the safety device to prevent self-uncoupling, as well as on the good working order of the traction collar cotter and the parts of its clamp. During the inspection of the car frame it has been recommended that particular attention be paid to the technical condition of the ridge beam and primarily in the places where it is connected with the king beam and where the supporting corner plates of the automatic couplers are located.

Taking into consideration the importance of insuring the required density of the brake main line and the established braking pressure, the preparation of automatic brakes at PTO's is conducted by specialized crews. The inspectors and automatic fitters have been furnished with the necessary monitoring instruments, apparatus, and attachments for the rapid and high-quality elimination of defects in braking equipment. Brake-testing cars are regularly being included in the components at all sections where trains of increased weight and length are in circulation.

Depending on local conditions, the making up of a long train is carried out either directly on a track of appropriate length or by connecting together two sets of rolling stock. In the latter case each set of rolling stock is presented for technical preparation and brake testing as a train on its own particular track. After both parts are connected together, a complete test of the automatic brakes is conducted. At the place where the head and tail parts of the train are connected attendance is mandatory for the specialist making up the trains and the car inspector; they check out the good working order of the automatic coupling clamps, the connections of the brake sleeves, and the opening of the terminal cocks. As an additional measure against possible self-uncouplings the automatic couplings of the head and tail cars of both parts of such a long train are checked out in good time by means of Pattern No. 873. In connection with the fact that it is paratically impossible to increase the PTO contingent within brief time periods, the conduct of the stipulated amounts of work with regard to the technical servicing of long trains is furnished by means of a corresponding increase in time devoted to inspection and repairs.

There has been an increase in the material incentives offered to workers at technical service points for processing heavy and long trains. Thus, for preparing a train weighing 6,000 tons and guaranteeing its non-stop passage through a guaranteed section the PTO crew which took part in the inspection and repair of its cars has received a supplementary payment amounting to 15 rubles. Its distribution among the crew members was regulated by a special statute on bonuses. If we take into consideration the fact that individual PTO's at the present time dispatch as many as 15 heavy trains during a shift, the supplement to the wages is very tangible. For preparing trains whose weights and lengths are less than maximum but which exceed previous schedule norms the supplementary bonus is paid out on a differential basis, depending on the weight and length of the rolling stock. In order to guarantee payment of the supplementary bonus, all systems allocate a part of their money from the railroad material-incentive fund.

A great deal of educational work has been carried out at all the car depots and in the PTO's. At workers' meetings explanations are made of the purpose and importance of improving the technology of the haulage process, and statements are made about the characteristics of the work ahead of us and the tasks of car specialists with respect to insuring the high quality of preparing trains for runs. On all shifts supplementary instruction is conducted regarding the discovery and elimination of defects in axle-boxes, automatic brakes, automatic coupling apparatus, and car frames of heavy and long trains to be dispatched on lengthened, guaranteed sections. Supervisors and specialists in car maintenance service travel out to technical service points on a regular basis in order to render practical aid and check out the organization of operations with regard to preparing heavy trains.

The timely and precise promulgation of the measures enumerated above and a number of others have allowed us to insure the normal operation of rolling stock under the new conditions. As more and more experience has been accumulated, the system of preparing and servicing trains has constantly been improved. We would like to cite an example which explains partially the nature of the problems which are arising and the approach to their solution. During the first stages of introducing the new method three instances of automatic coupling breakaways were allowed on tank-car trains. Although in each case the tail parts had been weakened by cracks in places which were inaccessible for inspection, an analysis of the circumstances of the breakdown was conducted in the most careful manner. As a result, it was established that the breakaways occurred on a section where a test of the automatic brakes had been carried out for efficiency and which was characterized by a transitional profile. It was also established that while checking out the efficiency of the brakes, the locomotive engineers, who had a rather brief period of operational experience, switched the brakes to the release position, being guided by their experience in driving trains of normal length. Upon release, the tail part of the train was located on a grade in a braked state, and this created an increased danger of automatic coupling breakaway. As a result of analyzing these cases, appropriate work was conducted with the car inspectors, supplementary instruction was given to the locomotive crews, and the testing of automatic brakes for efficiency was shifted to another location.

Experience in handling heavy trains has been developed further on this railroad. In connection with this, railroad maintenance has worked out a plan for additional measures regarding the strengthening of the repair facilities and improving the servicing of cars on these trains. In particular, it is planned to lengthen the narrow-gauge lines, the brake-lines and airlines at 13 technical-service points and preparation points, to earmark for the PTO's an additional 14 self-powered repair units, to set up 20 call posts at the P.T. with radio communication, to increase the compressor capacity of the

Rybnoye PTO, etc. Technical facilities have been strengthened for preparing cars for hauls--additional equipment has been allocated for the Kurbakinskaya PPV (Regulations for Railroad-Car Use), more improved technology has been introduced for refurbishing cars, utilizing the "Donbass" machines at the stations of Tula, Gritsovo, and Vyaz'ma, proposals have been made to create a new preparation point at the Makiets station, a mechanized car-repair point at the Bekasovo station, to modernize the tracks used for current uncoupling repairs at the Ozherel'ye station, etc.

Groups of the railroad's car-maintenance enterprises, having become actively engaged in the work on the further extension of experience in organizing the traffic of trains of increased weight and length, have evolved a socialist competition for high quality in the technical servicing of heavy and long trains, insuring their non-stop movement on guaranteed sections.

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NATIONWIDE EFFORT IN BAM CONSTRUCTION PRAISED

Moscow AGITATOR ARMII I FLOTA in Russian No 20, Oct 79 pp 3-6

[Article by M. Makhlin, reviewer for EKONOMICHESKAYA GAZETA: "BAM--A Path to Natural Riches"]

[Excerpts] The main route of the BAM passes through territory in Irkutskaya, Chitinskaya and Amurskaya oblasts, Buryatiya and Khabarovskiy kray. More than 4 billion cubic meters of earth-moving and excavation operations will be carried out during the entire construction period, and 3,100 artificial structures, including dozens of kilometers of tunnels, will be erected. More than 200 new stations are being built along the route. But the main complication is not just a matter of scale. A large part of the line lies in a zone of permafrost and increased seismic activity. The gradient between summer and winter temperatures is great--from +40 to -40 to -50 degrees. The railroad crosses the unexplored taiga, mountain ranges, mari and swamps.

Nature constantly presents the builders with "surprises." Thus it was during construction of the Nagornenskiy tunnel. Suddenly and rapidly an ice coating began to form. Bulldozers were unable to clean the ice from the tunnel. It was necessary to perform additional cement work before the elements retreated.

Tunnels are some of the most complex and labor-consuming parts in constructing the line. It is enough to say that the length of the Baykal'skiy tunnel is about 7 kilometers, and the Severo-Myskiy tunnel is more than 15 kilometers. And each step is literally linked with the unknown.

Construction is underway, leading the plans which were established. Understanding its important national economic significance, the labor collectives accepted increased Socialist obligations and are fulfilling them with honor. A patriotic movement, to achieve the greatest production per cubic meter of capacity from an excavator's scoop, has received the greatest dissemination. There are many of yesterday's soldiers among the forerunners of the competition. One is particularly joyful for such reinforcement when the former soldiers have the skills of a machinery operator or builder. For example, the first Hero of Socialist Labor on the BAM, Vladimir Novik, who came to Amurskaya oblast from the Ukraine, considers that his army training also helps him in his work. Now he heads an expanded brigade which is putting up facilities for the Mogot station on the Bam-Tynda-Berkakit line. The brigade leader was fortunate enough to meet with the Secretary General of the Central Committee of the CPSU, Chairman of the Presidium of the Supreme Soviet of the USSR Comrade L. I. Brezhnev during his trip to Siberia and the Far East.

He [Brezhnev] said that while in the railroad forces, young soldiers are continuing to work on building the BAM, and are making their own contribution to the peaceful, creative labor of the Motherland. The words of the report about how soldiers and officers are working on the "construction project of the century" resounded clearly.

Having expressed immense satisfaction with his meeting with builders of the Baykal-Amur railroad line, Comrade L. I. Brezhnev said that many of those who came here to this meeting are now working in places where the Baykal-Amur railroad line has ceased to be a project; the first trains are already passing over it.

Laying the Kabkal-Amur railroad line is intensive labor. Its participants are distinguished with high awards from the Motherland.

Many soldiers, sergeants, ensigns and officers wear the medals "For Construction of the Baykal-Amur Railroad Line" with pride. Officers N. Khalin, A. Zolot'ko, V. Seleznev and others received the "For Service to the Motherland in the Armed Forces of the USSR," third degree here. The names of the medal-wearers are carved into a marble slab in the unit's museum of glory in combat.

The whole country is building BAM. The supervision by the union republics, krays and oblasts over design and construction of cities, villages and other objectives over the route of the BAM is a very concrete and effective form of participation in the national affair of building the railroad line. Here the best representatives of more than 70 nationalities and ethnic groups in our country are working. Muscovites are helping build the city of Tynda, Ukrainians, the Urgal station, Leningraders, the city of Nizhneangarsk. Friendship, helping each other out, a sense of unity of problems and goals is born and strengthened in joint labor.

More than 1 million square kilometers, 5 percent of the country's territory, is included in the Baykal-Amur railroad line's so-called zone of attraction. Here new cities and villages and large industrial complexes grow visibly. And the first train will pass over the new railroad line to the Pacific Ocean sometime during the 11th Five-Year Plan.

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TRANSPORTATION

LENINGRAD TIED UP WITH GRAIN SHIPS; MORE TRANSPORT VIA FINLAND

Helsinki HELSINGIN SANOMAT in Finnish 30 Nov 79 p 31

[Text] The low Soviet grain harvest is effecting Finnish harbor and rail traffic. Ports on the Gulf of Finland are beginning to bulge with freight, while the railroads do not have enough cars to handle the loads. The prospects of a poor harvest in the Soviet Union this year have visibly affected the harbors and railways all through the fall.

According to recently published figures, the harvest in the Soviet Union this year is 179 million tons, which is 25 percent short of last year's record harvest. This year's harvest was the worst in 4 years, falling short of the 5-year average goal of 205 million tons per year.

Because of the poor harvest, the Soviet Union must import grain from the West. Grain shipments between North America and the Soviet Union are handled mainly in Black Sea ports, but Soviet ports on the Baltic also get their share. Traditionally, grain shipments are given preference at the docks, so other ships must either waste time waiting or else they must make delivery at other ports.

As for the ports on the Baltic, Leningrad in particular has been crowded for years. Major dam and dock construction is planned for Leningrad, but completion before the end of the decade seems unlikely. The inadequacy of Leningrad's harbor has affected traffic in ports on the Gulf of Finland. Previously, Kotka and Loviisa harbors were the beneficiaries of transit shipping, but this year the shipments are moving through ports farther west. This year, shipments going to Leningrad have been handled at Helsinki and even at Hanko. Transit shipments have taken up the slack at the eastern ports so that Kotka, for instance, is operating at capacity.

Shipments at Kotka are up to a record 3 million tons this year, of which 450,000 tons, or more than 15 percent, were transit shipments. Transit shipments at Kotka would be enough to operate Loviisa harbor, 40 km to the west, at full capacity. Kotka harbor is already crowded to the limits. There might be room for expansion at Loviisa, but a poor railbed into the city makes use of the harbor difficult.

Rail Shipping Taxed

Soviet grain shipments have also made their presence felt in rail traffic. Due to the heavy demand for rail cars for grain shipments within the Soviet Union, there have not been enough cars for shipments from outside the country--i.e., for transit shipments from Finland. Rail shipments headed for the Soviet Union have traditionally been sent in Soviet rail cars. Use of Finnish cars has been avoided for technical and practical reasons. Finnish rail cars have different couplings than Russian cars, which have a central bumper while Finnish cars are hooked to each other with a linkage coupling.

The Finnish railway does not want to send its own cars into the Soviet Union for fear they will go astray there. Railway officials say that they could let Finnish cars go as far as Leningrad, but for the time being, Finnish cars have not ventured even that far.

Rail transport between Finland and the Soviet Union has been predominantly inbound up till now. Last year we imported 4.3 million tons and exported 1.3 million tons.

There has been a particular shortage of boxcars, which are used in transporting paper products, for example. This fall there have been difficulties in making even contracted shipments, while other shipments pose still more trouble.

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TRANSPORTATION

BRIEFS

REFRIGERATOR SHIP UNDER CONSTRUCTION--Nikolayev (By A. Lutsenko, staff member of the wide-circulation newspaper KOMMUNAROVETS)--The shaping of the 180-meter steel hull of the ocean-going refrigerator ship "Proliv Viktoriya" is moving along at a rapid rate at the Shipyard imeni 61 Kommunar. They have completed the assembly of the sixth unit of the section ahead of schedule in the section working under senior foreman G. I. Podryadchikov and have moved on to the fifth. The brigades of Vasiliy Kolesnichenko and Grigoriy Shostak have also distinguished themselves in shock-labor duty. Shipwrights from the brigade of V. Koval' are also successfully fulfilling their socialist pledges. They are already into February 1980 on their work calendar. The shipwrights under V. Koval'chuk and the electric welders under B. Akhmedov are running ahead of schedule. [Text] [Kiev PRAVDA UKRAINY in Russian 3 Nov 79 p 2] 8663

ANTARCTIC EXPLORATION--(Radioed by E. Borisov, second assistant captain)--Continuing its Antarctic voyage, the "Bashkiriya" for the first time visited the mountainous island of South Georgia, which is covered with ice and snow. Circling the clusters of shoals and rocks, they have entered into King Edward Bay. The British [Grootwicken] station and a whaling base abandoned many years ago are located on its coastline. They made fast at a rather small moorage, where they took on fresh water for three days. While getting acquainted with the island, they went to the grave of the illustrious British researcher of the White Continent, Ernest Shackleton. They honored his memory with a moment of silence. When they left the harbor, Captain K. Loskutov set course for the [Sea of Cosmonauts]. A rendezvous with the motor vessel "Pioner Estonii" took place at the edge of the ice in the region of the Molodëzhnaya Scientific Center. It had delivered members of a polar expedition, hundreds of tons of cargo, airplanes and helicopters to the shores of the Antarctic. [Text] [Moscow VODNYY TRANSPORT in Russian 15 Dec 79 p 4] 8663

COORDINATED ACTIVITIES AT PORT--Klaipėda--A unified system for planning operations at the Klaipėda transport terminal has enabled a reduction in the layover of railroad cars and has speeded up the processing of ships. These were the results of the technical re-equipment of the port and of the clear-cut interaction of railway workers and dockworkers. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 8 Dec 79 p 1] 8663

LAUNCHING OF OCEAN-GOING VESSEL—Leningrad—The ocean-going motor vessel "Timur Frunze" was put into operation a month earlier than the appointed deadline. It was built by the shipwrights at the Shipyard imeni A. A. Zhdanov. The widespread use of the brigade method of organizing work has been conducive to speeding up operations. During the current five-year plan, the collective at the shipyard is building all of its ships ahead of schedule. [Text] [Moscow TRUD in Russian 2 Dec 79 p 1] 8663

LAUNCHING OF ICEBREAKER-FERRY--Riga (By S. Kuznetsov)--The diesel-and-electric-powered icebreaker-ferry "Koguva" was lowered into the water from the berths of the Riga Ship Repair Yards. It will run on the four-mile maritime crossing between the island of Saaremaa and the mainland. In comparison with previous ships of that same series, the "Koguva" has a number of improvements, which enables it to increase the carrying capacity of the icebreaking ferry as well as to speed up operations during the loading and unloading of the cargoes that are being delivered for the island's kolkhozes and sovkhozes. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 11 Dec 79 p 1] 8663

TESTING REFRIGERATOR TRANSPORT SHIP--Nikolayev (By A. Magin)--Operational testing of the refrigerator transport ship "Ukrainskiy Komsomolets" has been successfully completed at the Nikolayev Shipyard imeni 61 Kommunar. The ship was built ahead of schedule and has proven itself well in operations. The refrigerator ships "Proliv Kruzenshterna" and "Proliv Nadezhdy" are next on the production line. The workers of the brigade under Dmitriy Aseyev, who are engaged in the installation of refrigerating units, are displaying much creative initiative. Labor productivity in this collective has grown by more than 10 percent during a brief period of time. [Text] [Kiev PRAVDA UKRAINY in Russian 25 Sep 79 p 2] 8663

NEW PORT AT DNEPROBUGSKIY--Nikolayev (From a RATAU correspondent)--The installation and adjustment of the loading and unloading gear at the moorages in the new maritime port at Dneprobugskiy have been completed. In terms of the extent to which it is outfitted with equipment, there is nothing equal to it on the Black Sea. During the process of testing the equipment, the dockworkers handled more than 3 million tons of cargo delivered here by large-tonnage vessels. While processing one of the ore carrier giants of this model, the "Zoya Kosmodem'yanskaya," the port workers pulled 50,000 tons of bauxite out of its holds in a period of 46 hours. This is the highest indicator in the basin for the processing of friable cargoes. Having successfully mastered the modern equipment, the collective of the new port is competing for a fitting greeting for the 110th anniversary of the birth of V. I. Lenin. It has been decided to fulfill the six-month quota for the concluding year of the five-year plan by 22 April. [Text] [Kiev RABOCHAYA GAZETA in Russian 20 Nov 79 p 1] 8663

ANTARCTIC EXPLORATION--The horns of Soviet ships resounded with a remote echo along the coastal ledges of the Antarctic land of Enderby. The motor vessels "Bashkiriya" and "Pioner Estonii" were the first in the flotilla of the 25th Soviet Antarctic Expedition to reach the ice barriers of the "White Continent." The chief of the expedition, Hero of Socialist Labor N. A. Kornilov, has radioed to us concerning this. He reported that the ships have made fast at the fast ice strip at the roadstead of the Molodezhnaya Observatory and have set about the unloading of the expedition's outfit and equipment onto the ice. More than 250 scientists and specialists have arrived in the Antarctic aboard the ships. [Text] [Moscow IZVESTIYA in Russian 20 Dec 79 p 2] 8663

BAYKAL-AMUR RAILROAD--Builders of the central section of the Baykal-Amur railroad are preparing to submit for permanent operation the Tynda-Berkakit-Ungolnaya railway line. A working commission has already accepted all 152 bridges on the Tynda-Berkakit section of the line. [Blagoveshchensk Domestic Service in Russian 1000 GMT 22 Nov 79 OW]

KOMSOMOLSK PLANT--The first section of the BAM railway construction equipment plan was commissioned in Komsomolsk yesterday, bringing the total number of industrial enterprises in the city to 36. The plant's first section includes a score of facilities, including the main production structure whose four spans occupy an area of 24,000 square meters. [Khabarovsk Domestic Service in Russian 0930 GMT 29 Dec 79 OW]

NEW ELECTION DISTRICTS--It has been reported from Nikolayevsk-na-Amure that 170 election districts for elections to the city soviet have been established there or more than during the last elections. Remarkable changes are taking place in the lower Amur area, including appearance of new populated places on the rayon map such as Mnogovershinnyy Settlement where an ore mining enterprise is being constructed. [Khabarovsk Domestic Service in Russian 0930 GMT 21 Dec 79 OW]

BERINGOVSKIY SEA PORT--Navigation has ended at the Beringovskiy sea port. During the season the port handled 580,000 tons of national economy cargo, considerably more than required by the annual plan. [Magadan Domestic Service in Russian 0755 GMT 15 Nov 79 OW]

VOSTOCHNYY PORT--Upon completion of its second stage the Vostochnyy port will be able to handle as much cargo as being currently handled by Nakhodka and Vladivostok together. During the 1981-85 period nearly 70 large projects will be constructed along the Vrangelya Bay, including four new moorings to handle containers and general cargo, the second stage of the coal-loading complex with an annual capacity of 5 million tons, two plants to repair international standard containers, port fleet vessels and transloading equipment and other facilities. Construction of housing, administrative and service facilities will be continued after completion of the production base. [Vladivostok Domestic Service in Russian 0930 GMT 26 Dec 79 OW]

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